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SOME MEDICAL TOPICS OF SPECIAL CURRENT INTEREST.*

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Within the past year, I have made a rather complete personal survey of the general profession and its work in this State, and am pleased to report fairly progressive improvement. In many professions and industries, there is today over-organization, but this is not true of the Medical Profession in Virginia. In fact, we need more thorough organization of the State and counties, especially in co-ordinating business and professional relations in our work for the individual, as well as for the public. The three notable defects in our system of organized medicine, as developed by the survey, were: First—Lack of proper cooperation of the hospitals of the State with the physicians referring patients to them, and their failure to make these Temples of Health, also Centers of instruction to all the physicians in their communities; Second—The failure of the County Societies to provide methods of liaison with local private and public health agencies, by the appointment of members of their Public Relations Committees to assist and, if need be, adjust and lead all new health movements; and, Third—The necessity in the field for better office equipment and more scientific personal work by general practitioners, whereby earlier diagnoses might be made, and less reference work be advised, or become necessary.

The greatest need, however, judging from many letters received from widely separated sections, was for a new and more diversified professional service to patients and to the public, for it was revealed that the physician must meet changing needs, and to do this, he must study, or he would forget; he must go forward, or he would go backward,—he could not stand still and succeed in this day of transition in medical methods.

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This work of ours, the Profession of Medicine, is a noble one, a great profession, and should engage our best efforts and stimulate our greatest endeavors. We have yet but dimly seen our destiny, and the future stretches before us like the great ocean of truth, "all undiscovered." We have accomplished much, both as a Society and as individuals, but more lies beyond, beckoning us onward and ever forward in our search for the hidden and the unknown.

To those of you who do not know our past history of scientific attainment and professional advancement, I might tell the medical story of the ages, as medicine has gone forward from one conquest to another in the cure of disease and in the prevention of pestilence, but it is sufficient to say that it is still advancing, and has accomplished more in the past thirty years than in the previous one hundred, but is still far from attaining its fullest and highest aims.

If I had the time or inclination, I could tell you also some of the routes that have been traveled, and some of the experiments that have been conducted by scientific research workers in their efforts to solve the mysteries of disease and its causes, and the story would be often-times as intriguing as any of the famous romances of history; and yet, many diseases in their entirety are still unsolved problems, and the battlefields of life are still strewn with wreckage from the tireless war against germs that have claimed their millions of victims.

Before the close of this year it is estimated that 700,000 Americans will have died of four diseases alone, viz:—heart affections, Bright's disease, brain hemorrhage, and cancer. It is also pathetic to note that some of our most common diseases, such as influenza, pneumonia, and infantile paralysis, are nearly as fatal today as they were a century ago. The citation of these facts is not wholly discouraging, however, but simply a challenge to the future.

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In addition to the casualties from germ infection that are not yet fully understood, we know but little of body chemistry, of biological development, of the physiological processes of the ductless glands, of mental development and its everchanging tendencies, and a host of other mysteries of life and disease. Suffice it to say, however, that we have not to look in the past, nor to the future, to have our scientific interest awakened, or our zeal quickened. We need but look only at our own environment, and at once our pulses throb in the excitement of eager anticipation to find the means to conquer the enemy that stalks at our very doors.

For instance, only today, I have read that in a neighboring State, last year, pellagra, whose cause and cure we thought we had completely mastered several years ago, claimed one thousand victims in twenty thousand cases of that dreaded disease. Other similar facts could be easily adduced to show that we still need more education, more scientific knowledge and more skilled service.

In passing, may I say also, that at the very fountain heads of medical education, the medical colleges, there is need, and a crying need, for education, real education, in arranging medical college educational courses; those colleges need to teach their students less and more —less of many educational adornments, superficially making specialists, instead of general practitioners, and more of practical scientific methods to meet the existing conditions of every day life as the physician on graduation will find them; and, above all, more of the spirit of personal research work, and the habit of individual study of the cause and effect of disease; but, I must not be hypercritical, for if I am, I must appraise our own profession, for this is an age of appraisals, and, to be just, it is first necessary for us to know if medicine is meeting all its own obligations of private and public service.

Medicine, at present, it must be admitted, is in a transitional stage, and if the virility of the profession is to be conserved and continued, as Dr. Osler has said, "As the greatest factor in human happiness and in civilization," its relationships must have careful appraisal and consideration. Once, medicine was an individualistic profession; today, it is fast coming to have a public character, and if the public is appraising medicine, why should medicine not appraise itself?

Dr. William H. Ross, Ex-President of the New York State Medical Society, says: "Just as success for the physician in the practice of his profession depends upon the proper interpretation of symptoms, so does the future position of medicine depend upon the proper interpretation of the symptoms of public unrest, and the capacity of the Profession of Medicine to make its service available and adequate to meet all demands, both public and private." Moreover, medicine is no longer an isolated profession, nor the doctor, himself, a privileged member of the learned professions, nor even the sole repository of all knowledge and authority in medical matters, for, nowadays, the masses are being taught along medical lines, and the treatment of disease is eagerly, if not always learnedly discussed at every street corner and rural center. If discussed intelligently, all is well; if not, irreparable damage is done, and consequently, the opportunities for the physician are legion in number. Also, the health needs of the public, as well as the private necessities of the individual, must logically be met by the cooperation and solved by the guidance of the physicians. This will entail new duties on the membership of County Medical Societies, but it is the only way in which organized medicine can maintain its scientific authority and advance its professional interests.

Medicine is thus confronted by a new situation, but this is not an entirely new phase, for many of us have witnessed in our life-time another transformation in the evolution of medicine, just as remarkable as this, when diagnosis and treatment of disease were revolutionized because of new laboratory aids and the use of new instruments of precision.

This enlarged field of medical service is, then, but another developmental phase of this transitional era in medicine. We must recognize its advent and be prepared to meet its demands, not by fighting, but by educating. If we do not, some other health agency, or perhaps even some governmental agency, may.

Times are rapidly changing, and, if need be, we must change our methods of thought and action to meet squarely the issues presented. Not only is the public showing a steadily increasing participation in public health matters, but civic organizations and na-

tional foundations, in response to public demands and supported by public opinion, as well also as industry itself, are trying to advance health service in an effort to save as much as possible of the one hundred million dollars wastage in preventable illness, and all are joining forces to limit illness, and constructively make producers out of consumers. Unless organized medicine meets these obligations of public service, as has been outlined, some other agency must.

Furthermore, the social trends of the times irresistibly insist on better health service, and this is evidenced and reflected in public welfare laws, old age pensions, etc., the various civic organizations supplying the enthusiasm, and the Foundations the money. The individual relations of doctor and patient still exist, but social needs have changed, and forced to the front new demands for relief and new opportunities for service. We may be nearer than we suspect to such things as compulsory health insurance, sickness benefits, etc., or, perhaps later, entire and adequate medical care by the State, and we should pause to think.

In medicine, as in few other professions, its relationships to the public are both intimate and personal, and it should be easy for our profession to arouse medical interest in present-day social trends and formulate plans through organized medical channels already provided, making it co-equal in all health agencies, and thus put the profession in the position the public demands and expects.

Conference and cooperation must fall in with the advance guard, while the microscope and the scalpel must still be the protectors of the rear guard in the battle for human life. The physician has always practiced preventive medicine as individual to individual, but when it assumed police powers, he withdrew, though always believing in individual and mass prevention.

Now that social needs have changed, he no longer should fight the new movement by raising artificial barriers of economic conditions or social problems, but fall in with the new thought and cooperate with other agencies under the expert guidance of the profession. I would not have you think that I would ask you to be "quitters" in this struggle, and let new non-organized agencies gather the fruits of your age-old fight for your professional aims, nor would I advise that you be sulky camp-followers, contented with anything that is left, but, rather, I would have you visualize a new medical future, in which public thought, supported by public opinion, demands of us a larger stewardship and a fuller service under the guidance, always, of our profession. By giving up some old and worn-out ideas and prejudices, we can slowly steer the thought of the times by adjusting our methods, and, in this way, surely and safely guide the profession to bigger and better accomplishments.

No clear thinker nor even the casual observer of today doubts the evidence of a gradually increasing paternalistic movement on the part of the Government, nor of some increase in State medicine, but it is idle to fight these encroachments by politics or by legislation, for we are admitted failures in both fields. Rather let us wisely prepare for their advance by proper education, by cooperative relationships, and by medical statesmanship.

To solve these public health problems, our Society, with its present constituent County Societies, together with its State and County Public Health Relations Committees, has sufficient machinery, and we need nothing else but the enthusiastic devotion of our members, together with their expert scientific leadership. Without these, we cannot meet our present professional obligations and prevent further economic and professional disturbance of the private practice of medicine.

Surely, the practice of medicine today is threatened with an increasing economic disturbance, because of the lessened incidence of certain diseases, due mainly to our own efforts; but, on the other hand, a new pathology in disease is being studied and new types of examination of the patient are being practiced, as you will note by the wide interest, for example, in mental hygiene, which seeks a more complete exhibit of the patient's mental processes, and, consequently, a better understanding of the development of the individual patient, thus leading to a clinical treatment that in many instances includes the consideration of the patient as well as the disease—a new method to many practitioners.

I am not fully arguing this matter, nor any of the subjects to which I have referred, for I would not abuse the privileges of this hour, and, besides, I note two other speakers on tonight's program, who will probably follow up

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these passing thoughts in discussing medical relations to private practice.

In conclusion, we well know the virtues and the defects of our profession, and, while congratulating it upon its distinguished accomplishments, we are still aware that an even greater future of professional service is before us, if we shall self-appraise our service and our methods and fit our energies into present and future necessities. We have the men; we have the knowledge; and I have abiding faith that the coming family physician, the bulwark and strong arm of the profession, born now to new opportunities, will have the same spirit as of old, plus the new spirit of these new and changing days, for *new times demand new ideas.*

Victor Hugo, said: "One idea, just an idea, once its day of fulfillment has arrived, is mightier than a multitude of men."

I repeat, "new times, new ideas, new men"—the connection is logical, the results will be convincing.

I would not, if I could, recall the sad and sombre days of the World War, when the clouds of doubt and indecision hung low over our land and obscured the faint light of hope and faith that burned but dimly in the hearts of us all; but I would recall, if I could, the spirit of high courage and heart-loyalty of those trying days, for no sooner was a new idea for the common good announced than it was successfully accomplished, and, at home and on the field, it was but another bond of union for new endeavor and final success.

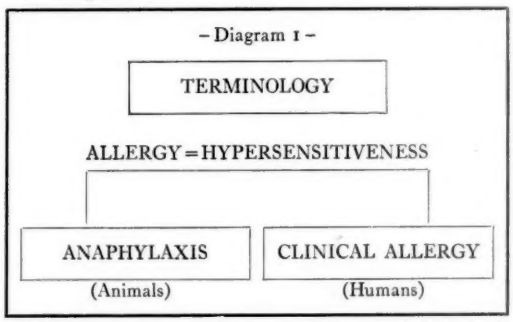
Let us, then, preserve the ethical *ideals* of the past, and keep step with the progressive *ideas* of the present; and the future will be ours, "to have and to hold."

OBSERVATIONS ON THE NATURE AND PATHOLOGICAL PHYSIOLOGY OF CLINICAL ALLERGY.*

By OSCAR SWINEFORD, JR., M. D., University, Va.

INTRODUCTION: Balyeat[1] estimates that about 7 per cent of the population of the United States are sufferers from some form of clinical allergy such as asthma, hay fever, urticaria, eczema, migraine, and allied conditions. The subject is very complex. The terminology is confusing and in many instances inconsistent. The premises upon which many of the present conceptions are based are theoretical or hypothetical. It seems desirable then to formulate a working hypothesis in terms of which we may explain simply and logically these varied and superficially unrelated manifestations which we think of as "allergic." The theme of the discussion is summarized in ten diagrams.

DEFINITION: Coca[2] defines allergy (hypersensitiveness) as that state in which an individual reacts specifically and with characteristic symptoms to the administration of, or to contact with, a quantity of any substance which, to the majority of the members of the same species, is innocuous. In this brief statement the fundamental concepts of specificity, characteristic symptom complexes and inherent harmlessness of the offending agent are given due emphasis.



TERMINOLOGY: There is a lamentable lack of unanimity in the use of such fundamental terms as hypersensitiveness, anaphylaxis, and allergy. Common usage (Diagram 1) makes allergy and hypersensitiveness synonymous broad terms. They have just been defined. Anaphylaxis refers to the experimental allergy of animals and clinical allergy to hypersensitiveness in humans.

Kolmer,[3] however, limits the terms hypersensitiveness and anaphylaxis to conditions of altered reactivity to non-protein and protein agents, respectively. Other authors limit the term allergy to hypersensitiveness in humans. Coca[4] admittedly complicates an already chaotic terminology by introducing a new term, "Atopy." He uses atopy to differentiate those apparently spontaneous manifestations of clinical allergy, such as hay fever, asthma, urticaria, etc., which result from an inherited capacity for sensitization, from other forms

*Read before the Post-Graduate Medical Society of Southern Virginia, January 13, 1931, at Hopewell, Va., as part of a symposium on Allergic Diseases.

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such as serum sickness, dermatitis venenata, and the tuberculin reaction in which heredity apparently plays no part.

Protein sensitization is often used loosely to include hypersensitiveness to non-protein substances. Idiosyncrasy usually signifies, in a non-committal way, an abnormal susceptibility to a food or drug.

– Diagram 2 –

NATURE OF CLINICAL ALLERGY

PHENOMENON	CONSTITUENT REACTORS
Immune Process	Antigen–Antibody (Immune)
Anaphylaxis	Antigen–Antibody (Anaphylactic)
Clinical Allergy	Allergen–Antibody (Allergic)

The Nature of Clinical Allergy: Allergic reactions are thought to be abortive manifestations of the immune process in that they seem to be mediated by a specific antibody-antigen-like reaction.

In the immune process antibodies are elaborated in the effort to neutralize or destroy harmful bacteria or their toxins. In allergy antibodies are also elaborated against foreign materials which, however, may be inherently harmless. The effort to destroy the foreign material here is misdirected. In both processes there is, among other similarities, a definite local reaction between the tissues and the antigen which is characterized by exudation and derangement of function. For example, exudation is typical in furuncles, pneumonia, and pleurisy, as well as in hay fever, asthma, urticaria, etc.

It will be interesting, perhaps, to review briefly some of the experimental data which determined the trend of this present concept of the nature of clinical allergy:

Koch[5] found that intradermal injections of tubercle bacilli into a tuberculous guinea pig produced a marked violent local reaction in twenty-four to forty-eight hours, with subsequent ulceration and healing but no systemic invasion. An identical injection into a non-tuberculous guinea pig produced systemic tuberculosis promptly, but little local reaction until ten to fourteen days later. The local reaction in the tuberculous guinea pig may be thought of as a manifestation of immunity in that it protected the animal against a dose of tubercle bacilli which would be fatal in a non-tuberculous animal. It must also be considered as a manifestation of hypersensitiveness because a normal non-tuberculous guinea pig could not be made to react similarly.

Hericourt and Richet[6] noted that intravenous injections of eel serum into normal dogs produced no symptoms. But identical injections about two weeks later produced violent reactions ending in death. They called this group of phenomena anaphylaxis. Others soon found that egg white, horse or rabbit serum, and a great variety of other proteins could be substituted for the eel serum without altering the character of the reaction.

Weil[7] showed that a sensitive guinea pig injected with the specific antigen reacted with an anaphylactic shock, but that continued injections of the antigen gradually produced an immunity, or markedly increased tolerance, to increased amounts of the antigen. He found, moreover, that the serum of these immunized animals would passively sensitize other guinea pigs in smaller doses than would the serum of a hypersensitive guinea pig. This capacity for passive transfer paralleled the precipitin content of the immune or sensitized animal's serum.

He further noted that if the injections of antigen were not continued the animals became hypersensitive again. And the precipitin content of the blood decreased. He deduced from these data that the difference between a hypersensitive and an immune animal was merely one of degree of circulating antibody content of the blood serum.

Manwaring[8] was unable to duplicate these results in dogs.

Von Pirquet and Schick[9] first called attention to the similarities between anaphylaxis in guinea pigs and serum sickness in humans who had received therapeutic horse serum. This was the first real correlation of experimental and clinical allergy.

Melzer[10] a few years later compared, by analogy, the bronchial muscle spasm of asthma to that of anaphylactic shock in the guinea pig.

Our present conception of the nature of clinical allergy is that it is fundamentally identical with anaphylaxis. This is based largely upon striking similarities between clinical manifestations of allergy and the following experimentally proven anaphylactic phenomena.

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1. Anaphylaxis is an antibody-antigen reaction.

2. The reaction is highly specific.

3. The antigen may be inherently harmless.

4. The antibodies are readily demonstrable and seem to parallel the precipitin content of the blood serum.

5. The sensitizing dose may be quite small.

6. An incubation or latent period follows the introduction of the sensitizing dose.

7. The shocking dose must be larger than the sensitizing dose.

8. Active sensitization is a lasting phenomenon.

9. Sensitization can be passively transferred to a normal individual or to the fetus in utero.

10. Passive sensitization is transient.

11. Multiple sensitization is readily induced.

12. The site of the union between antibody and antigen which results in the anaphylactic reaction has been shown to be upon the tissue cells and not in the blood or tissue juices.

13. The character of the anaphylactic shock differs in different species, e. g., bronchial muscle spasm predominates in the guinea pig, pulmonary artery muscle spasm in the rabbit, and hepatic vessel spasm in the dog.

14. Sensitized animals may be temporarily desensitized. Several methods by which animals may be made refractory to normally shocking doses of antigen are: by injecting large amounts of specific antibodies; by recovery from a sub-lethal anaphylactic shock; by injections of antigen during the incubation or pre-anaphylactic period; by intravenous injections of sub-anaphylactic doses or even of anaphylactic doses given slowly and well diluted; or, finally, by injecting non-specific proteins. The specific desensitization is believed to be brought about by gradual saturation of the sessile antibodies or by so increasing the circulating antibodies that they will neutralize the antigen before it unites with those attached to the sensitized tissue cells.

All of the above characteristics of anaphylaxis have been shown to be applicable to clinical allergy with these exceptions: In clinical allergy the antibody is not readily demonstrable except by passive transfer; the size of the sensitizing and shocking doses are not amenable to comparison; the site of the reaction cannot be demonstrated in vitro in humans as is the case with experimental animals.

There is then considerable evidence upon which to base the assumption that clinical allergy is fundamentally identical with anaphylaxis which in turn is an abortive manifestation of the immune process. This relationship is expressed crudely in Diagram 2.

– Diagram 3 –

ALLERGENS	=	SPECIFIC FACTORS

Protein and Non-Protein
- Foods
- Pollens
- Dusts
- Animal Epidermals
- Bacterial Products
- Drugs
- Miscellaneous..... Animal / Vegetable / Chemical

ETIOLOGY OF CLINICAL ALLERGY: Substances, to normally harmless quantities of which hypersensitive humans react specifically and with characteristic symptoms, are called *allergens*. They are analogous to the antigens of anaphylaxis and of the immune process. Coca calls them atopens. They differ from true antigens in that allergens, though they commonly are, need not be protein and that their specific antibodies are at present demonstrable only by passive transfer. Evidence is accumulating to show that non-protein substances may become antigenic, and to suggest that the failure to demonstrate allergic antibodies is due to inadequate technique.

Allergens, also called specific exciting factors, are commonly classified, on the basis of their occurrence in our environment, into foods, pollens, dusts, animal epidermals, bacterial products, drugs, and miscellaneous animal, chemical, and vegetable substances (Diagram 3). There are several hundred proven allergenic substances which are almost as varied as the constituents of our material environment. It is also convenient to group allergens in accordance with the manner in which they are brought in contact with the tissue cells which they sensitize and shock. Accordingly, we may think of skin contact, inhalation, ingestion, parenteral or bacterial allergens.

Heredity has already been mentioned as an important factor in the group of apparently spontaneous allergic diseases which Coca calls atopic. Children seem to inherit the capacity

for sensitization, rather than a specific hypersensitiveness, in approximate accordance with the Mendelian Laws. Offspring frequently are not sensitive to the same allergen as the parent nor need they suffer from the same allergic or atopic disease. In short, a father with pollen hay fever may have a child with egg asthma. The important practical fact remains that children with no detectable allergic family history may become violently hypersensitive whereas children with a strong family history may escape.

Age is of interest in that the more complete the inheritance the younger manifestations are apt to appear.

Occupational factors are often of great importance. For example, there are numerous instances of millers sensitive to wheat, farmers to pollens, painters to linseed oil, women to cosmetics, tailors to fur, etc.

– Diagram 4 –

NON-SPECIFIC (AGGRAVATING) FACTORS

Heat	Exhaustion
Cold	Malnutrition
Light	Focal Infections
Emotions	Acute Infections
Constipation	Endocrine Disturbances

Mechanical and Chemical Irritants

Non-Specific (Aggravating) Factors: It is a well recognized fact, emphasized by Vaughan,[11] that a well clothed, well fed, contented, hypersensitive individual tends to react less often and less violently to contacts with his specific allergens. Diagram 4 contains a list of the so-called non-specific exciting factors which seem to be capable of greatly influencing the frequency and severity of the reactions of a sensitized tissue to contact with specific allergens. Duke[12] offers evidence to support his belief that these non-material factors may occasionally be true allergens. The role which they play is very important but is imperfectly understood.

Mechanism of Sensitization: Contact between an allergen and tissue cells having the capacity for sensitization is prerequisite for the establishment of hypersensitiveness. Diagram 5 shows that the necessary contacts are mediated not only by direct contact, inhalation, and ingestion but also by the blood stream, which circulates allergens added to it by injection or absorption from the gastro-intestinal tract, focal infections, etc. It is quite obvious, then, that no tissue in the body is protected from potential sensitizing contacts with allergens. The list of allergic manifestations in the last column of Diagram 7 is ample support for this contention.

In most instances the individual becomes sensitized imperceptibly by normal contacts with normal substances in his environment. Occasionally sensitization follows injections of sera or drugs or prolonged exposures to occupational allergens such as furs, flour, pollens, dyes, etc. Transient sensitizations by transfused blood from allergic donors have been reported, as have rare cases of sensitization to materials completely foreign to the patient's environment.

It is still a mystery why some people become clinically sensitized and others do not. Heredity or congenital predisposition does not fully answer this question. That an individual will become hypersensitive to one foreign material

– Diagram 5 –

MECHANISM OF SENSITIZATION

PREREQUISITE = CAPACITY FOR SENSITIZATION (Often Inherited)

ALLERGENS reach tissues by:

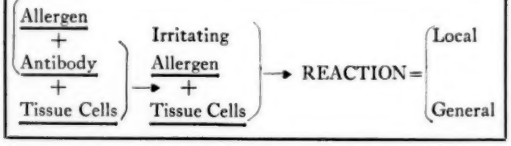
- Contact—skin, nose
- Inhalation—nose, bronchi
- Ingestion—stomach, intestines
- Absorption from (intestines, foci, etc.) → blood →
- Injection.....

→ nose, bronchi, skin, intestines, g. u., joints, c. n. s., bone marrow

and not to another and that certain tissues become sensitized while others do not may often be postulated on physical grounds, as an eczema from contact with silk or wool, or in hay fever from pollens. Food asthma is not so difficult to conceive of in this way, but the focal sensitizations of the skin in egg urticaria, of the joints in certain cases of infectious arthritis, of the brain or meninges in migraine, etc., are very difficult to explain in the light of present knowledge. Of course, these tissues are in potential contact with all blood borne allergens, but why do some tissues become sensitized while others do not? Efforts to explain this on the basis of lowered resistance and functional hyperactivity of the sensitized tissues are vague at best.

– Diagram 6 –

MECHANISM OF ALLERGIC REACTION

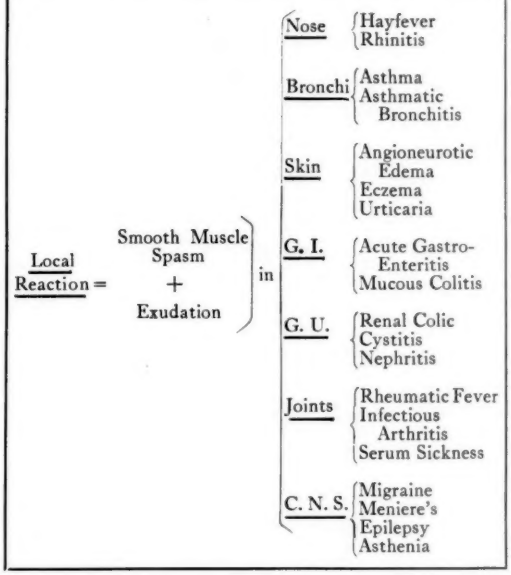


MECHANISM OF THE ALLERGIC REACTION: It was postulated above that the allergic reaction is an abortive manifestation of the immune process. If Zinsser's[13] conception of the steps in the immune reaction be merged with Hanzlik's[14] theory of the mechanism of the allergic reaction, the following hypothetical changes may be considered as occurring in the pathogenesis of an allergic reaction (Diagram 6): In a hypersensitive individual allergens are brought to and unite with specific allergic antibodies (atopic reagins of Coca) which are attached to the tissue cells. This allergen-antibody union results in irritating physico-chemical changes which stimulate the attached cells. When enough cells are thus stimulated there is a demonstrable local reaction. More extensive stimulation may result in general or systemic manifestations. The reaction destroys the allergen.

THE LOCAL REACTION: The local manifestations of allergy are extremely varied (Diagram 7). The consideration of them is greatly simplified, however, by accepting the apparent fact that all of them may be explained in terms of smooth muscle spasm plus exudation. In the walls of tubular structures such as the

– Diagram 7 –

MANIFESTATIONS OF THE LOCAL REACTION



bronchi, intestine, and ureter, smooth muscle spasm causes symptoms of obstruction which become more marked when exudation into the lining mucous membranes is superimposed. In other locations exudation is the more prominent phenomenon. In urticaria, angioneurotic edema, hay fever, the exudative arthritides, and perhaps in migraine, Meniere's syndrome, and other conditions, the symptoms appear to be due to periodic abnormal extravasation of fluid. Eczema is often thought of as chronic urticaria. Changes secondary to chronic allergic exudation have been suggested as the cause of many cases of chronic nephritis. If one remembers that the liver is exposed to an infinite variety of allergens in the portal blood it would not be surprising to find that portal cirrhosis is a sequel to repeated allergic periportal edema. The eosinophilia does not lend itself readily to the above explanation. It must not be considered that all cases of all the conditions listed in Diagram 7 are explainable in terms of the allergic reaction.

THE GENERAL REACTION: General manifestations of the allergic reaction are typically (Diagram 8): subnormal temperature, leucopenia, eosinophilia, slow pulse, lowered blood pressure, prolonged coagulation time, increased

– Diagram 8 –

MANIFESTATIONS OF THE GENERAL REACTION

General Reaction = SHOCK
- Subnormal Temperature
- Slow Pulse
- Lowered Blood Pressure
- Prolonged Coagulation Time
- Increased Blood N P N.
- Decreased Blood Chlorides, Ca. & P.
- Decreased Sugar Tolerance
- Leucopenia

non-protein nitrogen constituents of the blood, decreased blood chlorides, an early decrease followed by an increase in the carbon dioxide combining power, occasional decrease in blood calcium or phosphorus, and an occasional lowering of carbohydrate tolerance. It should be emphasized that these general manifestations are not often noted, they are rarely severe and very rarely are all of them present at the same time. When marked the general reaction is called allergic shock.

ALLERGIC EQUILIBRIUM: It is well known that many hypersensitive persons do not react to every contact with the substance to which they are sensitive. Vaughan[15] and, later, Cohen[16] discuss this subject somewhat as follows:

An allergic individual who is not in contact with his specific allergen is said to be in a *Simple Allergic State*. This is a purely latent condition. If he is exposed to the allergen and does not react he is said to be in *Allergic Equilibrium* or the *Balanced Allergic State*, which is another way of saying that the individual has at the moment a tolerance for the allergen. There seems to be a balance between the factors which inhibit and those which tend to cause the allergic reaction.

– Diagram 9 –

ALLERGIC EQUILIBRIUM
= BALANCED ALLERGIC STATE
= TOLERANCE

Hypersensitive Individual + Contact with Allergen → No reaction = Allergic Equilibrium

The chief inhibiting factors are thought to be refractory or desensitized tissues, inadequate exposure to the allergen, and absence of the non-specific aggravating factors (Diagram 4). The causative factors are apparently an adequate degree of sensitization, an adequate contact with the allergen, with or without the addition of non-specific factors. Cases of multiple sensitization may require contacts with two or more allergens simultaneously. The importance of each factor varies with each case and from time to time in the same case. A reaction may be expected when this balance is upset in favor of the causative factors.

SUMMARY: Clinical allergy may be thought

– Diagram 10 –

SUMMARY

Allergic Individual + Specific Allergen + Non-Specific Aggravating Factors

Specific Allergen → Allergic Equilibrium = No reaction

Specific Allergen → Allergic Reaction → Local Reaction → Hayfever, Asthma, Urticaria, Eczema, Serum Sickness, Migraine, Meniere's, etc.

Allergic Reaction → General Reaction → SHOCK

of as an abortive manifestation of the immune process.

The present conception of the pathological physiology of clinical allergy may be stated briefly as follows:

An individual who has the capacity, probably inherited, becomes sensitized, in almost any tissue of his body, by direct or indirect contacts with one or more protein or non-protein allergens of his environment. These contacts usually occur imperceptibly. Subsequent contacts with the same allergens, perhaps aggravated by non-specific factors, result in an allergic reaction if his tolerance for the allergen is exceeded. The reaction may be local or general or both. The local reaction, which is characterized by smooth muscle spasm plus exudation in varying proportions, is manifested as asthma, hay fever, urticaria, migraine, etc., depending upon its location in the bronchi, nose, skin, or brain. The general reaction is infrequent, when present it is called allergic shock.

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SELECTING THE TREATMENT FOR HEMORRHOIDS.*

By E. H. TERRELL, M. D., Richmond, Va.

So many papers have been read before this society on the treatment of hemorrhoids, that I hesitate to add another to the already extensive list. Some have advocated certain ambulatory methods while others have suggested modifications and improvements in operative technic. Most of these papers were freely discussed, because every phase of the subject is of interest to the proctologist. Even after all of these exchanges of ideas, however, few of us agree entirely in methods of treatment, under the numerous and varying conditions encountered. This is as might be expected, and it will always remain a problem for each individual to settle for himself. It is not possible for the treatment of hemorrhoids to become standardized, for this will vary, or at least it should, under different conditions and, whenever a choice of several modes of treatment exists, there necessarily will be diversity of opinions.

This paper is presented only as an expression of my views on the subject, these conclusions having been reached after a number of years of study and observation. Many of you, also, I am sure have long ago formed fixed ideas on the subject. I find, however, that there exists some confusion in the minds of young students of proctology in regard to the treatment of hemorrhoids and I hope that what I shall say will be of some assistance to them. If this object is attained, I shall be satisfied.

A word of advice to the beginner or to those who contemplate taking up the treatment of hemorrhoids, I hope is not out of place here. Naturally it is expected that when one undertakes the treatment of any disease he wishes to do it satisfactorily and well. Some unfortunately seem to have the idea that rectal diseases are so simple that little or no study is necessary to treat them successfully. Also, apparently they are unmindful of the fact that they are dealing with a part of the body whose functions are most important and that, while it may be necessary to remove existing pathol-

*Read before the American Protologic Society, in Philadelphia, June 8, 1931.

ogy, except in rare instances it must not be done at a sacrifice of these functions. How can one except to treat hemorrhoids or other rectal diseases without knowing the healthy rectum? He must be familiar with the anatomy and physiology of the parts, and also, some knowledge of its embryology will be of great aid. Before undertaking the treatment of hemorrhoids one should make a study of the etiology and pathology of the different varieties, as well as the various complications often found associated. These associated or complicating diseases always compel a consideration when selecting the mode of treatment for hemorrhoids. There is no place for guess work in the treatment of these diseases, if unfortunate and even sometimes disastrous results are to be avoided. Regardless of the method of treatment employed, the physician must be constantly on the alert and at all times exercise constant care and good judgment throughout, if ideal results are to be expected. Unfortunately, because of poor judgment, inexperience or improper treatment, the end results are sometimes far worse than the original condition. Deep ulcerations, strictures and incontinence are some of the consequences which the proctologist is not infrequently called upon to correct. To reiterate, let me strongly urge those who contemplate doing rectal work to thoroughly prepare themselves before undertaking it. Otherwise irreparable harm surely will result and both they and the profession will be more or less discredited.

There is a need in many localities for men who are properly prepared to do rectal surgery and this, at present, is one of the few specialties in medicine not over crowded.

The busy rectal surgeon is consulted every day, often several times daily, for the treatment of hemorrhoids. With our present knowledge of the disease, he is not justified in advising hospitalization and surgical removal in all cases regardless of the size and character of the tumors. It is expected that he employ an efficient, permanent and safe means, to be sure, but, in my opinion, the least inconvenient to the patient and the most economic measure which promises a cure should be used. In other words, he must select the treatment best suited to the individual case, this opinion being based upon the findings on examination.

In selecting the treatment for hemorrhoids, which may be palliative, operative or ambulatory, depending upon the nature of the existing pathology, many things must be considered, often requiring the exercise of the greatest care and good judgment. When hemorrhoids are strangulated or acutely inflamed with swelling and edema, rest in bed, hot compresses and other palliative measures should be employed. When the attack is over, steps toward obtaining a cure should be considered. Sometimes after the inflammation has subsided, injection of the hemorrhoids may seem advisable. Frequently, however, after such an attack the infection which caused it has only become quiescent, and particularly if the history shows more than one attack, excision of the hemorrhoids with drainage is indicated. Also, when there are recurrences of thrombotic hemorrhoids, the etiology must be considered, if relief is to be obtained. In some, particularly young adults, a thrombosis of the veins at the anal outlet is of frequent occurrence. Examination in such cases will show one or more infected sinuses beneath the muco-cutaneous membrane. These are blind pockets which begin in the bottom of the anal valves and extend downward beneath the covering of the canal to the anal margin. Such an infection is usually with organisms of a low grade and for a time may cause only an irritated and contracted sphincter muscle. When the infection has extended to and involved the adjacent hemorrhoidal veins, these become inelastic and rupture easily if the parts are subjected to a strain. A permanent cure of such a condition is best obtained by an obliteration of these infected areas, that is by incision and drainage. These low grade or attenuated organisms cause external hemorrhoids, fissures and, in fact, most of the pathology found in and near the anal canal. The nature of the disease depends largely upon the parts attacked. Ordinarily these infections are beneath the covering of the canal and not infrequently remain quiescent for varying lengths of time, subject to periodic flare-ups, which may be brought on from constipation, straining at stool, etc. In the intervals between attacks these infections are easily overlooked. Often an apparently satisfactory operation for hemorrhoids fails to give complete relief because a concealed infection was not recognized and no provision made for its removal. This same condition not infrequently appears, also, in the treatment of hemorrhoids by one of the ambulatory methods. Although the usual symptoms of in-

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ternal hemorrhoids may have been entirely relieved by the operation or treatment, a discomfort and irritation will sometimes continue on account of an associated infection involving the anal canal. Of course, unless the patient is completely relieved of all symptoms the results are not satisfactory. In such a condition the operation must include not only excision of the hemorrhoids, but removal at the same time of all other associated pathology.

About 50 per cent of the hemorrhoids which come for treatment are of the simple uncomplicated internal variety. These develop very slowly, often existing many years before the usual symptoms of bleeding and protrusion are observed. They are covered by mucous membrane and primarily are the result of a varicosity of the superior hemorrhoidal veins. It is this type of hemorrhoids only which may be treated by injections or some of the other ambulatory methods. It has been my custom for years to treat all such cases, with rare exceptions, by injections of quinine and urea hydrochloride. When these are carefully selected, a proper technic observed and a sufficient number of treatments given, 100 per cent cures can be promised. I have found this treatment safe, having used it regularly and constantly since 1913 without a single serious complication. There have been a few local infections, not more than five or six, which occurred during the course of treatments. In my early experience, occasionally the fluid extravasated beneath the covering of the canal with resulting edema and swelling of the skin at the anal margin. This may result from an over distention of the tissues or from making the injections too low. In recent years this has been a rare complication. The injections when properly made are painless, but some will complain of a dull ache or a feeling of pressure in the rectum, beginning in twenty to thirty minutes after the treatment and lasting about the same length of time. Heat applied in the form of a compress for a few minutes usually relieves this discomfort promptly. It is well to bear in mind that some individuals have an idiosyncrasy to quinine. As stated in a previous paper, I have found one in about five hundred or 1/5 of 1 per cent of my patients have this susceptibility. In these the usual symptom is an irritation of the skin or an urticaria which comes on promptly after the injection. This is, at least, a very annoying complication. It is well when giving the first treatment to inject only a few drops of the solution until convinced that an idiosyncrasy to the drug does not exist. Of course, if an allergic reaction occurs, the treatment should not be repeated. In a few, with this constitutional peculiarity, I have resorted to the use of hydrochloric acid injections, as recommended by Dr. Hanes, with good results.

Recently I have used glucose and sodium chloride in the treatment of four cases of internal hemorrhoids. In each of these some sloughing occurred after the injections. In one there was a constant oozing of blood for a week or more. This remedy may be preferred in varicose veins of the leg, but I believe it is not a very safe remedy in hemorrhoids, because of its tendency to cause a slough. Whenever sloughing occurs there is danger of h e m o r r h a g e. Contrary to the opinion of some, quinine and urea, in the usual strength of 5 per cent, does not cause a slough, unless the hemorrhoid is greatly over distended.

These treatments should be repeated at intervals of four to seven days until all the hemorrhoidal tumors have disappeared, that is, until none can be found on examination. Failure to obtain a permanent cure is often due to insufficient treatment. I have found recurrences rare after once the tumors have been completely removed. An exception to this rule is in internal hemorrhoids occurring in young persons under twenty or twenty-five years of age. Some of these seem to have an inherent tendency toward a varicosity of the hemorrhoidal veins, and often of other veins, as well. In such patients an excision of the hemorrhoids is to be preferred.

In my opinion, there are many reasons why the proctologist of today should use one of the non-surgical methods of treating simple internal hemorrhoids, and also from my experience, injecting them is the easiest, safest and most efficient means yet devised. Until a few years ago, only the surgical removal of hemorrhoids was worthy of consideration. The simple mention of injecting hemorrhoids would bring forth severe condemnation. The chief reason for this feeling of antipathy toward this was the fact that originally these treatments were almost entirely in the hands of the charlatan and advertising quack. Now, it and also certain forms of electric treatments are advocated by many of the most reputable physicians both in this country and in Europe.

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These ambulatory methods are gaining rapidly in favor and will continue to do so, I believe, although one still hears occasionally some opposition to them. Recently, I saw an adverse criticism from one of our own members in regard to the injection treatment. I think he has never used it, but, if so, not enough to be a competent judge. Every doctor must find at times, I think, those suffering from hemorrhoids on whom operations are not advisable. I have seen many times patients almost exsanguinated because of bleeding hemorrhoids. Any operative procedure in a patient in such a state carries with it considerable danger and is to be avoided, if possible. Rarely does an injection of a few drops of quinine and urea fail to stop, promptly, bleeding from an ulcerated internal hemorrhoid.

I am of the opinion that the proctologist of today who does not inject hemorrhoids, or at least use some form of office treatment in the simple cases, will soon find that his patients are going elsewhere. He may be sure that the public is interested in any curative measure which avoids the necessity of hospitalization and operation. The specialist who advises surgery as the only means of curing hemorrhoids has little or no advantage over the general surgeon. While it may be conceded that he has a superior knowledge of the subject, the patient often does not stop to consider this. He will be inclined to consult the specialist because his friend or neighbor has been cured by him without an operation. The layman, as a rule, knows of only one disease of the rectum and that, of course, is piles or hemorrhoids. Abscesses, fistulas, fissures, polyps and, in fact, every disease to which this part of the body is heir is brought with the hope that it may be cured without an operation. When examination reveals one of these purely surgical conditions, the physician will then describe to the patient the nature of the disorder and the kind of operation necessary to produce a cure. If this is done in a convincing manner he is, in the majority of instances, engaged then and there to perform the operation. In other words, I am convinced that one's surgical work, in rectal diseases will be greatly enhanced, as well as his office work, if he has acquired the reputation of treating hemorrhoids (in suitable cases) by the injection or some other satisfactory ambulatory method.

Because a form of treatment is pleasing to the patient or because it is to the advantage of the physician to use it are not of themselves sufficient reasons for adopting it. If, however, in addition to the foregoing it is shown that the treatment is a safe one, economical and produces a positive and permanent cure, with little or no loss of time, then surely there is little else to say in its favor.

If one expects to obtain uniformly good results from the injection of hemorrhoids, care must be used constantly in the selection of cases. Only the simple uncomplicated internal hemorrhoids will respond satisfactorily to this treatment and under no circumstances should it be used in others.

Medical Arts Building.

THE DANGEROUS PRE-SCHOOL AGE AND OUR OBLIGATIONS.*

By L. M. HINES, M. D., Drill, Va.

Interest in the child and child-welfare has been evident at all ages throughout history but it is only in modern times and during the past few years that the child has really come into its rightful place and been recognized and treated as the future hope of every Nation. In the early Spartan history the child was considered worth saving only if he showed signs of being strong; if he were weak and feeble he was put to death. With the establishment of Christianity in Rome dates the first recognition of the child as an individual.

Living as we do in this twentieth century, when preventive medicine plays such an important role not only in our daily lives but in human welfare and the progress of the Nation as a whole, it becomes the honor bound duty of every true physician to keep a watchful eye upon the young, that physical defects may be detected early and corrected if possible, in order that they may not cause trouble in later life.

In 1909 President Roosevelt called a "White House Conference" on the problem of child-welfare. At this time it was decided to create a Children's Bureau in the Department of Labor. In 1912 the bill for this Bureau was signed, and the Bureau was given an appropriation of $25,000 for the first year, their main object being to investigate "all matters pertaining to the welfare of children and infant life." Then in 1917 President Wilson, at the

*Written at request of chairman of the Child Welfare Committee of the Medical Society of Virginia.

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suggestion of the Children's Bureau and the Woman's Committee of the Council of National Defense, inaugurated what has proven to be in all probability the most effective plan for stimulating interest in child-welfare throughout the Unted States. In approving this plan President Wilson said, "Next to the duty of doing everything possible for the soldiers at the front, there could be no more patriotic duty than that of protecting the children, who constitute one-third of our population. The success of the efforts made in England is evidenced by the fact that the infant death rate, during the second year of the war, was the lowest in her history. Attention is now being given to education and labor conditions for the children by the legislatures of both France and England, showing that the conviction among the Allies is that protection of childhood is essential to winning the war. I am very glad that the same processes are being set afoot in this country, and I heartily approve the plan of the Children's Bureau and the Woman's Committee of the Council of National Defense for making the second year of the war one of united activities on behalf of children, and in that sense a children's year." With the closing days of the war the American Red Cross and the various Social workers all fell in line, and on April 6, 1919, a Nation-wide campaign for weighing and measuring young children was begun, and it is impossible to evaluate the far-reaching effect this movement has had. Just as Science has developed by leaps and bounds during the past decade, so has interest in the pre-school and school child.

From the time a child is weaned until it enters school is perhaps one of the most dangerous periods of its entire life, simply because it does not have routine physical examinations, and the mother may be greatly surprised when she accompanies her supposedly healthy child to a pre-school clinic to find that it has some physical defect.

Approximately one-third of the children entering school for the first time each year have been found to need medical attention before they can profit by the educational opportunities offered them. We can readily see what an economic loss this would be, besides a great handicap to the child.

It was not, however, until 1927 that the Division Superintendents of Virginia Schools passed a resolution calling upon The Medical Society of Virginia "to undertake the study of the best means of preventing or correcting the bodily defects of school children." The Society responded by appointing a committee who are working on a plan whereby children entering school for the first time may be examined early in the school year and have any defects corrected before school begins.

We have in this State what is known as the "five point child campaign" which is the minimum standard at present. The West law which was passed in 1920 requires that all school children have a physical inspection on these five points:

1. Vision,
2. Hearing,
3. Teeth,
4. Throat,
5. Weight.

Now, in order to receive a Five Point State certificate, the child must be able to read line marked 20 on the Snellen eye testing chart at a distance of twenty feet, each eye being tested separately, or have glasses properly fitted. The illiterate eye testing cards are used for pre-school children. They must be able to hear the conversational voice at a distance of twenty feet, each ear being tested separately. The teeth must be reasonably clean, with no exposed roots or unfilled cavities. There must be no symptoms of trouble with tonsils and adenoids. The children must not be 10 per cent or more under weight nor 20 per cent or more over weight. This campaign has been getting wonderful results but I think we should follow the example of other state health departments and make our standard a nine point child, by which we mean, in addition to the above five points, that they should have their birth certificates, have correct posture, be successfully vaccinated against smallpox and immunized against diphtheria.

This program may be successfully carried out through the Division Superintendents of Schools, the teachers, the Public Health Nurses, the local boards of health, and the family doctors. Early in the school year, survey forms are sent out from the Division Superintendent's office to the teachers in every school. These include the name of the beginner, name and address of parents and name of family physician. These survey forms are classified and each doctor is visited to arrange for a pre-school clinic, to be held either in May or June in the doctor's office, and the usual

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office fee should be charged where the parents are able to pay it. Routine physical examinations are made in each case and the results recorded on white cards to be kept by the physician for reference, on blue cards to be given each child to hand his teacher on the first day of school, and a summary sheet for the worker.

We as general practitioners throughout the State can render a great service by helping with these pre-school clinics and I think it best, when possible, to have both parents present while examining the child, so that each physical defect may be pointed out and its dangers emphasized at the time. Of course all abnormal findings are recorded, treatment being advised in some and urged in others.

Each child should have a very thorough and complete physical examination. The day perhaps is not far remote when it will be necessary to have, in addition to this, blood examinations and tests for intestinal parasites. Then and not until then can we hope to refer to our school teachers for cultural and educational training 100 per cent perfect children.

PRESENT CONCEPTS OF THE FEMALE SEX HORMONES AND THEIR CLINICAL APPLICATION.*

By E. C. HAMBLEN, M. D., University, Va.

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There is no field in medicine which has been so contradictory, so disappointing, or so confounded with fallacious conclusions as that of endocrinal therapy. Results have been interpreted, in many instances, as being due to organotherapy, when, in reality, they were only accidental. Also, not infrequently, our practicing clinicians have been led far astray by the extravagant and often unwarranted claims of the over-enthusiastic, as well as of the unscrupulous, pharmaceutical chemists.

As a result of the studies of Allen and Doisy,[1] Frank,[2] Aschheim and Zondek,[3] Corner,[4] and numerous others, our concepts of female sex physiology have undergone fundamental change. We have learned that the role of anterior hypophysis as a sex gland is an important one; we have ascribed to it the title "motor," or more correctly, perhaps, "regulator of the ovaries."[5] The interrelationship of the thyroid is still chiefly speculative.

A brief summary of our knowledge, at present, of the active hormones in female sex physiology is given.

Anterior Hypophysis: There seems to be quite good evidence to assume the existence of four hormones from the anterior lobe of the hypophysis,[6] Two of these hormones are strictly of a general character, one influencing growth and one influencing metabolism. The other two hormones (Prolan A and B) are described as sexual in function.

Recent work by several investigators as well as the personal experience of author seem to indicate that both Prolan A and B constitute one hormone—the "master-sex anterior hypophyseal hormone." This hormone is said to be non-sex specific, stimulating both ovaries and testes.

Prolan A has been shown to regulate the development and maturation of the Graafian follicle. Stimulated by its action, the follicle elaborates its characteristic hormone—the follicular (female sex) hormone. With the beginning secretion of the follicular hormone, the development of other follicles is said to be inhibited, thus, possibly, explaining uni-ovulation.

Prolan B regulates and controls the formation of the corpus luteum. The corpus luteum, under its regulation, is said to elaborate its specific inhibitory hormone.

These two hormones, therefore, act directly upon the ovaries and their effects are due to responses from the ovaries. They are, of course, without action where bilateral oophorectomy has been done. Their occurrence in the circulating blood in pregnancy, after the sixth to eighth week, has been described. They disappear rapidly from the blood with the termination of pregnancy or with intrauterine death of the fetus. Urine in pregnancy contains these hormones in quite high concentration and the Aschheim-Zondek pregnancy test[7] is based upon their identification. The physiologic hypertrophy of the mammary glands and the process of lactation are said to be at least in part regulated by these hormones.[8]

Ovary: The *follicular* hormone, which is formed by the Graafian follicle, is, perhaps, also produced in pregnancy by the placenta, for it occurs in the organ in large quantities. After the sixth to eighth week of pregnancy it is found in the circulating blood and in the urine in large quantities. It has been shown to undergo cyclic changes in the circulating blood during the men-

*Delivered before the Albemarle County (Va.) Medical Society, March 5, 1931.

strual cycle; its concentration gradually increases until the onset of menstruation, when it rapidly disappears from the blood stream. It has been shown to be responsible for the congestive, premenstrual phase of the endometrium and, in lower animals, to be definitely concerned with the development of the primary sex characteristics. The action of this hormone is directly on the lower genital tract and, consequently, its action is not influenced by spaying.

The *corpus luteum* hormone ("progestin") is said to inhibit ovulation and to be responsible for the progestational proliferation of the endometrium. In pregnancy, it is said, in part at least, to protect the uterus from the oxytocic principle of the posterior lobe of the hypophysis; to aid in the general nutrition of the product of conception; and to regulate the proliferation of the decidua.

Thyroid: Thyroxin, thyreoglobin or some active principle of the thyroid gland is closely interrelated with the female sex physiology. The nature of this mechanism is not known.[9]

Preparations of These Hormones Available for Clinical Trial

No preparation corresponding to the Prolan A of Zondek has been made available for clinical trial. It is said to be very unstable.

We have been furnished an anterior pituitary luteinizing hormone by Parke, Davis & Co. from their experimental laboratories. This has been bio-assayed on the basis of the ovarian responses attributed to Prolan B (the production in the ovaries of immature mice of "Blutpunkte" or of excessive luteinization). It is prepared by the extraction of the urine of pregnant women.

The isolation of the follicular hormone in crystalline form by Doisy and his co-workers[10] has given us a very active and stable preparation of this hormone for clinical trial. It is prepared also from the urine of pregnant women and was named "theelin" by the discoverers. Its physiological activity is standardized on the basis of its production of estrus in ovariectomized sexually mature rats. We have been supplied theelin for use by Parke, Davis & Co.

There have been no preparations of the active corpus luteum hormone for clinical trial.

Clinical Application of these Hormones: The possible clinical value of these new active, potent, standardized hormones has offered hope in a field which appeared quite hopeless. The proper trial of these hormones requires a careful and thorough study and selection of cases and the establishment, if possible, of the gland or glands at fault.

Each case of possible endocrinal menstrual dysfunction should receive a most careful history with particular attention to—prenatal health of mother; patient's infant developmental history; menarche; presence or absence of irregularities; delayed menses; all the characteristics of the subsequent menstrual cycle should be noted. A most painstaking physical examination should be done with special regard to—abnormalities of stature; gracility or thinness of bones; the height, weight, age ratio; stigmata of deviation; and any abnormalities of facies, posture or response to questions. The secondary sexual characteristics should be carefully studied—voice, amount and distribution of hair, texture of skin, nails, and amount and distribution of subcutaneous fat. Special examinations should include—B. M. R., differential cell count, X-ray of sella turcica, visual fields charting, sugar tolerance test, Mosenthal test, blood calcium, blood cholesterol, and the Frank test for the female sex hormone in the blood.

In selecting cases for endocrinal treatment, these facts are of importance. Irregularities at the time of menarche or delayed menarche are danger signals and are often reflected in adult life as hypoplasias often associated with sterility. Dysfunctions of the pituitary, thyroid and ovary are, in the order mentioned, the most common causes of disturbances of the menstrual function in adolescence. Various grades of glandular dysfunction occur, ranging from the slightest aberration from normal to the extreme conditions of gland deficiency.

Treatment

The treatment of these cases should be of two types: 1. adjuvant, and, 2. specific.

In the adjuvant treatment, deranged metabolism is corrected. A well-balanced diet, especially in its mineral and vitamin constituents, should be assured. Anemia should be corrected. Regularity in habits and normal sexual psychology are essential.

For specific treatment, at present, our mainstays are thyroid substance, active follicular hormone and an active anterior pituitary hormone.

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Thyroid substance is indicated where there is hypothyroidism. It is the only endocrinal preparation, in the light of our present knowledge, which is active by mouth. Enteric coating may allow a smaller dosage. The dosage must be judged entirely by the response of the given individual, as there is wide variation in individual tolerance. Cases receiving thyroid substance should be carefully followed with frequent B. M. R. determinations and weighed frequently.

The follicular and the anterior pituitary hormones must be given by the hypodermic route. Recent work has shown the absolute inactivity of the many preparations of both which have been administered by mouth. Whether we were using "replacement" treatment with the follicular hormone, or "stimulative" treatment with the anterior hypophyseal hormone, our general scheme of administration has been similar. The hormones are administered in doses of 100 rat units daily for two weeks, followed by a rest interval of two weeks. The administration of the hormone is given during the intermenstrual phase, if possible. Variations in the time of administration and in the dosage will probably come with our further knowledge of these hormones.

Cases Treated

We have treated various types of menstrual disturbances with these hormones.[11] Our cases have included those of menopause, natural and artificial, oligomenorrhea, amenorrhea, primary and secondary and idiopathic menorrhagia. Our most gratifying results have been obtained in those cases which represent hypofunctions—menopause, amenorrhea and oligomenorrhea. The results of these treatments have been encouraging. Several brief case reports are given as illustrative of some of our cases:

Case I. White girl, age 15, complained of scant flow and dysmenorrhea. Pelvic examination showed moderate hypoplasia of internal genitals. She received two series of theelin, with two normal menstrual periods, of three days duration, free from pain.

Case II. A white girl, age 16, gave a history of absolute menstrual irregularity, with frequent intervals of amenorrhea for four to six months. The general physical examination was unimportant, except for moderate hypoplasia of internal genital organs. The dates and duration of her recent menstruation are—December, 1929, 4 weeks; May 7, 1930, five days; July 12, 1930, four days. Treatment with follicular hormone was begun August 26, 1930. Patient menstruated September 30, 1930, four days; November 2nd, four days; December 1st, four days; the period due December 29th was missed; patient menstruated January 25th, four days. Subsequent periods have not been reported.

Case III. A white woman, 24 years of age, gave a history of one year's amenorrhea. General physical examination, B. M. R. and X-ray of sella turcica were normal. Patient was given a series of anterior pituitary hormone, at the conclusion of which she had a normal menstrual flow.

Case IV. A white woman, age 23, who had been married for five years, gave a history of having never menstruated. Her symptoms include—absence of libido, dry skin, and obesity. Physical examination revealed—hypoplasia of the breasts and external genitalia, sparse and adolescent distribution of the pubic hair, moderate anemia of the chlorotic type. B. M. R. and X-ray of sella turcica were normal. Patient was given a series of anterior pituitary hormones during which she had a normal menstrual period. She received two subsequent series followed by two normal menstrual periods.

Case V. A white woman, age 46, complained of extreme nervousness, emotional instability, and severe headaches, following cessation of menstruation six months previously. After receiving theelin for two weeks, she obtained practically complete relief from her symptoms.

Case VI. A white woman, age 44, complained of nervousness, hot flashes, emotional instability, and various anesthesias following radium therapy three years ago, resulting in menopause. She received theelin daily for three weeks with marked improvement of all symptoms, but suspended treatment when she began to suffer with lower abdominal cramps, interpreted by her as being a possible return of menstruation.

Case VII. A colored woman, 21 years of age, had a hysterectomy and bilateral salpingo-oophorectomy, July 17, 1930, and complained of extreme nervousness, asthenia, loss of appetite, and loss of weight following operation. She received theelin for three weeks, with complete relief from all symptoms.

Case VIII. A white woman, 21 years of age, complained of menstrual irregularity as-

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sociated with frequent intervals of amenorrhea, lasting three to four months, menstrual nose bleeds and excessive weight. Physical examination revealed marked hypertrichosis, masculine distribution of pubic hair, stiff bristles on chest, and moderate hypoplasia of internal genitalia. Weight 167 pounds; B. M. R.—15 per cent. She was treated with anterior pituitary hormone and thyroid extract. She was given an obesity diet. She has, since beginning treatment, had two regular normal menstrual cycles. At present her B. M. R. is +9 per cent; her weight is 149 pounds. There have been no nose bleeds.

Comments. Our results have been sufficiently encouraging to warrant further careful and painstaking study and to offer hope for the future in a field which a few years ago seemed quite hopeless. Further study, particularly as to the time of administration, as well as of the dosage of these hormones, is very important. Our most satisfying results have been in the relief of the symptoms of the menopause, either natural or artificial. Results have been encouraging in the treatment of selected cases of amenorrhea and of oligomenorrhea.

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EDITOR'S NOTE:—Since submitting this article, Dr. Hamblen has become a member of the Medical Staff of Duke University Hospital, Durham, N. C.

IRRADIATION IN THE TREATMENT OF MALIGNANT TUMORS OF THE URINARY TRACT.*

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A number of therapeutic agents are at our disposal for the treatment of malignant tumors of the urinary tract, among which may be mentioned irradiation by radium and Roentgen ray and surgical procedures, including excision either with the scalpel, or radio-knife, and diathermy. The selection of the proper method or procedure to be used in a given case is just as essential as the correct means of administration. Such selection is dependent on a number of factors; for example, the location and extent of the neoplasm, its pathologic characteristics, whether or not it has been treated previously, and the age and general condition of the patient.

There is considerable difference of opinion concerning the significance of these various factors as well as the efficacy of radiation therapy, and it is for this reason that we have attempted to present a discussion of the subject, the scientific principles upon which it is based, and the therapeutic effects and results that may be expected. Our opinions and conclusions are based on the results of our own group of cases, and also those of others who have reported in recent medical literature. For the sake of brevity, the report of individual cases and statistics will be omitted.

The biological effect of radiation on living tissue was noted very shortly after the discovery of the X-ray by Roentgen in 1895 and radium by the Curies in 1898. Since this time epochal advances have been made in the use of Roentgen ray and radium therapy in the treatment of malignant neoplasms in general, and particularly in the field of urology.

This has been brought about by the combined efforts of urologists, surgeons, radiologists, pathologists and physicists, so that today, with improved methods of technique in applying irradiation, a new chapter is being written in the treatment of malignant tumors of the urinary tract.

It was soon found after the discovery of the radio-active agents that embryonal, or undifferentiated tissues in general, were more susceptible to radiation than the more highly differentiated tissues, and it is upon this selective action of radiation that our present system largely depends.

There are other biological factors, however, that undoubtedly influence the radio-sensitivity of tumors. Tumors may be destroyed by the direct action of radiation on cell structure, or on their blood vessels, thereby interfering with their nutrition. If these are young, newly

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formed vessels, such as occur in highly cellular, rapidly growing and highly malignant tumors, the reaction to irradiation may be very prompt and effectual, since the young endothelial cells succumb very readily to radiation.

The environment of the tumor cells may also influence their susceptibility to irradiation, probably largely through an effect on their nutrition. For instance, oft-times the primary tumor, when it depends entirely upon its own blood supply for nutrition, may be very readily destroyed by irradiation, whereas the cells derived from the same growth which metastasize to the regional lymph nodes and derive their nutrition from the lymph may be very resistant. Therefore, if the tumor cells of metastatic lesions in regional lymph glands are relatively more susceptible to the direct effect of radiation than the normal tissue cells, they can be destroyed by irradiation. If, on the other hand, they are more resistant, they cannot be destroyed without producing necrosis of the normal tissues in which they are lodged.

This is also true of primary highly differentiated resistant tumors. Doses of radiation sufficient to cause death of the tumor cells cause necrosis and ulceration with involvement of the surrounding normal tissues. Therefore, in tumors of these types, and also those that are so large or extensive as to make complete destruction impossible, we strive to produce large amounts of fibrous tissue about the individual cells or the entire tumor, thereby choking off the tumor and restraining its growth.

Since the method of treatment and the type of reaction depend largely upon the cellular structure, blood supply and environment of the tumor, it is obvious that a biopsy, if available, should be of material assistance and may aid materially in estimating both the degree of malignancy and of radio-sensitivity.

Often, however, a biopsy is impossible or inadvisable, and we have to rely on our judgment and previous observations. As yet, there is still a justifiable conflict of opinion regarding the relative merit of the physical agents and surgical procedures in some of the extensive malignant lesions of the urinary tract. In some instances, the greatest prospects of cure and of palliation in the truly inoperable lesions may be expected through the combined use of both. Therefore, the surgeon, or urologist, and the radiologist must cooperate in order to obtain the best results, as the proper combination of surgery and radiation requires a thorough knowledge of the uses and limitations of both methods.

If neoplasms of the kidney are diagnosed early enough, radical surgical removal is the method of choice and will give a comparatively high incidence of cures. After such a radical removal, the operative field including the perirenal fat and regional lymph nodes and all metastatic lesions, if any, should receive adequate high voltage Roentgen radiation, the object being to influence any glandular, bone or visceral metastasis that may have developed, or to ward off metastases from tumor cells that may have been left behind at operation. Owing to the possible debilitating effect of such treatment, it should be postponed ten days or more after operation. Subsequent courses of radiation therapy may be very advisable on the doctrine of giving the patient every chance.

The so-called hypernephroma represents the most common tumor of the adult human kidney, which, according to the hypothesis of Grawitz, originates from misplaced fragments of adrenal cortex, which may remain quiescent or become malignant.

One of the most striking features of the hypernephromata is their tendency to invade the branches of the renal vein and metastasize to the lungs, bones, liver, and other portions of the body. Therefore, a case suspected of being this type of tumor should have a thorough radiographic examination of the chest and bones before operative procedure is undertaken.

Second in importance and frequency among renal neoplasms are the carcinomata, which are of several types. These tumors, as in the case of the hypernephromata, should be dealt with surgically whenever it is possible. However, most of these cases should receive irradiation either primarily or post-operatively, since recurrences and metastases are rather common.

In those cases in which radical removal is impossible, or inadvisable, as an initial procedure, high voltage Roentgen irradiation properly administered will sometimes render the condition amenable later to surgery by shrinking, or partially destroying the tumor.

In the far-advanced inoperable cases, radiation therapy is about the only means we have at our disposal for helping these hopeless individuals. Pain, which may be a distressing symptom, may be greatly benefited by the irradiation. While we may not hope for perma-

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nent cure in this group of cases, yet, in most instances, we can make the patient more comfortable and prolong his or her life, which certainly makes it worthwhile.

In peri-renal and retro-peritoneal tumors, which are usually sarcomatous, the use of radiation therapy has proven of great value. Relief of symptoms and prolongation of life are seen in most cases, and some patients remain in good health for long periods, the growth becoming shrunken and fibrosed.

The papillomatous growths of the kidney are of considerable interest because they are so apt to cause transplants in the ureter and bladder, and it is for this reason that the kidney should always be investigated when papillomatous growths are discovered in the bladder. The majority of tumors of the bladder are papillomata, or carcinomata, of various types, and of these the papillary neoplasms are the most common form.

While neither time nor space will permit a lengthy discussion of these tumors, yet experience has proven that, in order to treat a bladder tumor successfully, certain factors concerning that particular tumor must be known. For instance, whether a papilloma is benign or malignant, is very important. In carcinoma, whether papillary or other type, it should be determined whether it is infiltrating, or non-infiltrating, operable or inoperable, and whether or not metastases are present, either in the adjacent lymph glands or at some distant point.

Practically all tumors of the bladder may be regarded as being potentially malignant because they all have a tendency to recur. The diagnosis of bladder tumors is usually founded on the gross and cystoscopic characteristics of the tumor rather than on the histologic structures, but, when possible, tissue should also be removed for biopsy.

However, an experienced cystoscopist can determine malignancy of the bladder in a fairly large percentage of cases from his examination, plus the clinical evidence, the cardinal symptom of which is bleeding. Occasionally the hemorrhage is so severe, or the bladder is so irritable or so contracted, that inspection with the cystoscope is impossible, and in such cases cystography will generally help to establish the diagnosis.

A normal bladder will show an outline usually circular, or oval, with smooth well-defined walls, whereas, in case of a tumor, there will be a filling defect and irregularity corresponding to the portion of the bladder wall that is diseased. If the tumor is large, occurs in an older patient, and is irregular in outline, especially if it presents a broad base, one would think first of malignancy. If it is small, smooth and pedunculated, one would think of a papilloma which would probably prove to be benign.

In the treatment of papillomata, fulguration, or electro-coagulation, has been the method of choice if the tumor is not too large and not situated too near the internal sphincter of the bladder. On the other hand, this method has been found practically useless in the treatment of carcinomata. When there exist papillary tumors which are fungating and developing rather rapidly and have a very good blood supply, the condition is ideal for radiation therapy, either with high voltage X-ray alone, or in combination with radium, if this agent is available.

When the tumor, even though malignant, is not of the infiltrating type, and is so situated in the bladder that it can be resected radically, such is undoubtedly the best procedure, supplemented by high voltage Roentgen irradiation in adequate doses.

But for the infiltrating type of tumor, only about ten per cent (10%) of which are either sufficiently circumscribed, or so situated as to permit a successful radical resection, we feel that radiation therapy is the method of choice, for the following reasons: (1). The immediate mortality rate is lower. (2). The prolongation of life is probably greater, and (3). The economic result is probably better. Needless to say, the mortality following bladder resection, especially when the base, trigone, or ureteral orifice is involved, is often very high.

As for the remaining primary infiltrating carcinomata of the bladder that are recognized as inoperable, and also the secondary malignancies arising from the uterus, rectum or prostate, there is not much alternative, for these must be treated, if at all, by radiation, or some combination of destructive process plus radiation therapy. Naturally, very few brilliant results can be expected under the circumstances, yet the results, even in this unfortunate class of patients, are sufficiently encouraging and gratifying to make it worthwhile to treat every case. Hemorrhage and pain are generally more

or less relieved, and occasionally the tumor completely disappears. Such a tumor, even though apparently destroyed, may recur, and, for this reason, the patient should be kept under close observation and should frequently have cystoscopic examination by a competent cystoscopist, so that any recurrence may be recognized early and treated. We have found that we get better final results, if we plan to give two, three, or more series of radiation treatments at suitable intervals.

In the use of high voltage Roentgen radiation, the greatest caution should be observed in measuring and directing each dose, and in estimating the cumulative effect of these doses —for upon these factors, our end results largely depend. Realizing that the details of Roentgen technique will prove uninteresting to those of you who do not specialize in radiology, I will only briefly mention the most important points. Our present technique is based on high voltage (200 KVP), heavy filters, and the so-called fractional dose method, which is a divided series of radiation treatments given within a period of about ten days to three weeks, aiming to keep up a continuous radiation, or saturation, within the limits of skin tolerance. The object of this is to produce the desired biologic change in the neoplastic tissue that is being treated. It is of paramount importance to adhere strictly to some technique possessing a certain degree of flexibility as well as accuracy, and yet deliver to the tumor area the maximum amount of radiation. The necessity of a flexible technique is to allow adjustments to the requirements of a particular case, as it is generally agreed that there is a variability of sensitivity to radiation in different individuals as well as in different tumors. Therefore, each case should be thoroughly studied and treated as an individual entity. and for this reason the clinical judgment and experience of the radiologist plays an important part.

Dr. James Ewing stresses the importance of adequate dosage, and goes so far as to state that the doses of radiation delivered by the average radiologist, or surgeon, are too small to accomplish the desired result. It is, therefore, important to know the quality and quantity of radiation, as well as the underlying pathology, so that the proper dosage or radiation intensity will be given.

To control these factors, we have spheregaps and meter controls which are essential, but, in addition, X-ray therapy machines should be calibrated and standardized at regular intervals by careful ionization measurements conducted by a competent physicist. The intensity output should be estimated in terms of the international roentgen or "r" unit. Only in this way can we arrive at the correct dosage for a given case.

Lastly, frequent examinations of the blood should be made to determine the effect of radiation upon the white blood cells, in particular, although estimation should also be made of the red blood cell count and hemoglobin. The number of white blood cells is reduced more rapidly following prolonged radiation therapy than is that of the red blood cells, and it is considered rarely safe to treat a patient further when his white cell count has fallen below 4,000.

In conclusion, an attempt has been made in this paper to present briefly the important role played by radiation therapy in the treatment of malignant tumors of the urinary tract. It is not offered as a panacea for all lesions, nor is it the method of choice in the treatment of all conditions, but it is our opinion that when properly, carefully and judiciously used, either alone, or in combination with surgery or other physical agents, radiation therapy is a potent factor in the treatment of urologic neoplasms. Statistics have purposely been omitted for the sake of brevity, and our opinions and conclusions are based on our own results and a survey of the literature. The surgeon or urologist and the radiologist must cooperate in order to obtain the best results, and, if each case is studied thoroughly and treated as an individual entity with due regard to certain important pathologic, biologic, and technical factors, the good results that may be obtained will prove highly gratifying to all concerned.

CONTRA-INDICATIONS FOR LAPAROTOMY.*

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Is this a case for the surgeon?

Surgical treatment of acute conditions has saved so many lives, and a timely operation has restored to health so many chronic invalids that in any patient presenting symptoms

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of acute or recurrent abdominal disease, this question sooner or later arises.

Upon the prompt and correct answer often depends not only important financial considerations, but also the health and even the life of the patient. But despite advancement in medical knowledge, improvement in methods of diagnosis and perfection of surgical technique, we still have occasion, in some instances, to deplore the fatal omission of a necessary operation, and the employment of futile surgical procedure in other instances when operation is not needed.

For example, deaths from acute perforated appendix still occur. In a series of operations for acute appendicitis recently reviewed, it was found that 18 per cent had perforated, and that the mortality in this group of perforated cases was 18 per cent, whereas the mortality in the non-perforated group was nil. Another observer found that abdominal operations were performed in 20 per cent of cases in which symptoms were due to renal stone.[1] Obviously practice is not abreast of available medical knowledge in the diagnosis of abdominal and related diseases.

Many circumstances contribute to produce this state of affairs. For example, *symptoms* of acute surgical disease of the abdomen are well known, and usually lead to the formation of a correct opinion, while the necessity for prompt action, and the serious consequences of delay or omission, have been so often emphasized by sad experience that surgical procedure is sometimes unnecessarily hurried.[2]

On the other hand, a chronic syndrome which does not yield to medical measures is sometimes passed on to the surgeon "as a last resort" or for "exploration" for no better reason than that other remedies have failed to produce a satisfactory result.

Mr. H. J. B., a railway foreman, 64 years of age, suffered an attack of abdominal pain, distention, and vomiting. These obstructive symptoms subsided after an evacuation of the bowels, and a thorough survey revealed no evidences of organic disease. Under hygienic management the bowels became regular without laxatives, and the patient gained some weight. There remained, however, a considerable amount of mental depression, and he was particularly anxious concerning cancer. A few months after he was last seen the information was received that an exploratory laparatomy had been performed, and only a slight hepatitis was found. A few weeks later, following the operation, the patient developed an involutional psychosis for which he was hospitalized in a Government institution.

The consequences of such illogical procedure is also manifest in the number of patients with single or multiple abdominal scars who are still seeking relief from abdominal distress.

This situation naturally suggests three methods of possible improvement:

First, a better acquaintance with the rationale of diagnosis (medical logic). This may be acquired by a complete and diligent restudy of the subject.[3] Such a study is essential, not only to beginners but to every one who accepts the responsibility of giving diagnostic advice, for the value of such a review is progressively inhanced in proportion to clinical experience.

Second, even in cases showing evidence of acute surgical disease of the abdomen,[4] adequate study can be made without dangerously delaying operation. Such study should include—

(a) History of *previous* illnesses or operations as well as present illness.

(b) A systematic physical examination, including organs and systems *not* suspected of disease. The heart, lungs, nervous system, eyes, ears, nose, throat, pelvic organs, bladder, and prostate should receive such investigation as any general practitioner can give. Positive findings in one of these fields may require consultation and special examination, and may lead to the diagnosis of a non-surgical disease. Even if surgical operation is decided upon, certain laboratory tests should not be omitted, and, if there is the slightest doubt, laboratory studies should be extended to include such tests as may be made without causing dangerous delay if an operation is assumed to be necessary. Considered in the order of the simplicity and importance, the following examination should be made—

Urine: Presence of blood, pus, or sugar if found in the usual examination of the urine obviously demand further investigation before operation.

Blood: A high leucocyte count, above 18,000, or a peculiar differential count may point emphatically to non-surgical disease. Blood sugar determinations may show that abdominal pain, nausea, and vomiting are due to acidosis, either without or with abdominal surgical dis-

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ease.[5] A scybalous stool with mucus may indicate an acute attack of mucous colitis.[6]

(c) Roentgenological examination of the chest made at the bedside may reveal a central pneumonia without physical signs, or some other chest pathology, thus removing the patient from surgical status.

Third, during the study of a case presenting symptoms of acute intra-abdominal conditions, it is important to know and bear in mind that there are many non-surgical conditions which may masquerade as the so-called "acute surgical abdomen." Operation for these conditions is not only an error, humilating to the physician, but it may jeopardize the life of the patient. If we simply call to mind some of these conditions when attempting to make a diagnosis, some such mistakes will be avoided. It may be worth while to catalogue some of such conditions.

INTRA-THORACIC CONDITIONS

1. Pneumonia
2. Acute pericarditis
3. Mediastinal disease
4. Coronary occlusion
5. Angina pectoris
6. Ruptured heart, first stage
7. Pneumothorax, acute spontaneous
8. Aneurysm with slow leakage.

INTRA-ABDOMINAL CONDITIONS

1. Pyelitis
2. Crises of sickle cell anemia
3. Nephrolithiasis
4. Dietl's crisis
5. Intestinal parasites
6. Mucous colitis

MISCELLANEOUS

1. Meningitis
2. Encephalitis, early
3. Crises (tabetic)
4. Typhoid
5. Typhus fever
6. Referred pain of spinal origin
7. Tonsillitis
8. Herpes zoster
9. Malarial fever with leukocytosis
10. Lead colic

The above mentioned conditions in an atypical form have presented themselves in an embarrassing manner in my own personal experience, and there are many reports in the literature illustrating the real necessity for prompt differential diagnosis of such conditions, but since they are rare we are apt to forget that they present such a diagnostic problem.

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PRACTICAL POINTS IN THE ROENTGENOLOGIC DIAGNOSIS OF PEPTIC ULCER.*

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As early as 1906, John C. Hemmeter tried to obtain aid from the roentgen ray in the diagnosis of gastric ulcer by administering a small quantity of bismuth subnitrate in the expectation that the drug would adhere to the crater and thus reveal its site. In one or two cases the effort seemed fairly successful. In 1909, Reiche, by filling the stomach with a suspension of a bismuth salt was able definitely to depict the crater of a large ulcer on the lesser curvature. Five years later, Lewis Gregory Cole demonstrated the niches and bulbar deformities produced by duodenal ulcers. In following years both technic and interpretation improved vastly, and today the universal employment of the roentgen ray for the diagnosis of peptic ulcer testifies to the efficiency of the method.

Contrary to former belief, gastric ulcers are not common. For example, in the last year at The Mayo Clinic they were found in scarcely more than 1 per cent of patients subjected to roentgenologic examination of the stomach and they constituted less than 3.5 per cent of all gastric and duodenal lesions revealed by the roentgen ray.

With respect to their morbid anatomy, three varieties of gastric ulcer are recognized: (1) erosions so shallow that the loss of substance is hardly appreciable, (2) penetrating ulcers which have produced a definite excavation of variable depth in the gastric wall, and (3) perforated ulcers, which may be sealed at the serosa or may burrow into an adjacent organ or tissue and thus form a pocket outside the

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stomach. The favorite seat of all varieties is on the posterior wall near, sometimes immediately on, the lesser curvature, in the vicinity of the angular incisura, which is the most dependent portion of the lesser curvature. However, they are frequently situated on the posterior wall distant from the curvature, or in the antral segment of the stomach, and exceptionally they may occur on the anterior wall, the greater curvature or in any portion of the stomach, but I have never observed an ulcer above the plane of the esophageal opening or noted the report of such a case.

The fundamental diagnostic sign of gastric ulcer, elicited by roentgenologic examination with the opaque meal, is the visualized ulcer-crater, the niche, or its exaggerated form, the accessory pocket. In the majority of cases the niche appears as a bud-like prominence on the margin of the gastric silhouette, often on the lesser curvature, as depicted in the mesial view. However, corresponding to the situation of the ulcer, it is frequently necessary to inspect the gastric shadow in the oblique or lateral view to discover a marginal niche. In many cases, especially when the ulcer is remote from the curvature, no marginal niche can be discovered, but on approximating the gastric walls by palpatory pressure the crater is visible as a rounded dense fleck, or niche *en face*, within the fainter shadow of the stomach. The accessory pocket, representing the cavity of an ulcer which has perforated the gastric wall and invaded neighboring tissues, is seen as a more or less rounded barium shadow outside but near the stomach, usually on the lesser curvature side. The barium in the accessory pocket may show an upper fluid level and be capped by a bubble of air. Most often the pocket is in the liver, but it may be in the pancreas, spleen or anterior abdominal wall. Accessory pockets are extremely rare.

Certain secondary signs are of value, either in stimulating the examiner to search for an ulcer or in corroborating the diagnosis. Often the rugae about an ulcer are accentuated and converge toward the crater. Almost invariably when gastric ulcer exists the stomach is of the hook-form, and in many instances the pyloric segment is curled toward the median line. Occasionally gastric ulcer gives rise to hour-glass deformity of the stomach either by scar-contraction or more rarely by spastic constriction of the circular muscles in the plane of the ulcer. Spasm of the gastric antrum, producing irregularity or even obliteration of the barium shadow in this segment, is a common accompaniment of gastric ulcer wherever situated. It is most commonly seen at a distance of 2 to 4 cm. proximal to the pylorus. Retention from the six-hour meal occurs frequently, but the stomach is not often dilated, and apparently the retention is usually due to spasticity of the pylorus. Ordinarily peristalsis is fairly active, but the waves may skip the ulcer-bearing area. Tenderness to pressure over the niche is an item of confirmation.

In making the diagnosis, certain simulants of ulcer require exclusion. The projection on the lesser curvature between two peristaltic waves resembles a marginal niche, but, of course, advances as the waves progress toward the pylorus and will be deceptive only when a diagnosis is attempted on one or two films alone. A bit of barium in the bowel adjacent to the stomach may imitate a niche, but it shifts its position when the angle of view is altered or the stomach is manipulated. The secondary signs mentioned accompany various diseases and functional abnormalities of the stomach, and only the demonstration of a niche which is constant in situation and appearance is a valid basis for exact diagnosis.

Distinction between simple and malignant ulcers frequently occasions difficulty. A perforated ulcer with an accessory pocket is seldom carcinomatous. Ulcers with craters exceeding 3 cm. in diameter are usually, but not invariably, malignant. Smaller ulcers are benign, as a rule, but occasionally they prove to be malignant. Obliteration of rugae, complete absence of spastic manifestations, irregular shape of the niche and lack of tenderness are suggestive of malignancy even though the ulcer is small. An ulcer whose crater is encircled by a prominent or overhanging ridge is almost certainly an ulcerating cancer. Prepyloric ulcer is especially hard to distinguish from cancer or other lesions; often its niche cannot be demonstrated and the distortion of the antrum is virtually identical with that produced by prepyloric cancer at an early stage, syphilis or hypertrophy of pyloric muscle.

Rather frequently gastric and duodenal ulcer are associated. Last year at The Mayo Clinic 22 per cent of the gastric ulcers found at operation were accompanied by duodenal ulcer, although heretofore this percentage has been con-

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siderably lower. It is obvious that when either lesion is discovered the examiner should investigate as to the presence of the other.

I would point out that as gastric ulcers are relatively rare, the roentgenologist should not be too ready to make this diagnosis, and should confine this interpretation to cases in which a definite niche can be discerned. Because antral ulcers are hard to identify as such, and because he cannot always distinguish accurately between benign and malignant ulcers, he will have a rather high ratio of errors in endeavoring to make these distinctions. Nevertheless, almost without exception, when an ulcer exists, its manifestations are so pronounced that he can at least definitely affirm that a lesion is present, and this fact, in conjunction with the clinical data, will usually lead to a correct specific diagnosis.

Although by no means a novel theme, duodenal ulcer holds a commanding and practical interest. It is the most common organic disease of the alimentary canal which can be revealed by the roentgen ray, and its roentgenologic diagnosis can be made with greater accuracy than that of any other common lesion of the digestive tract. At The Mayo Clinic during 1930 the ratio of duodenal ulcers to gastric cancers was 5 to 1, and to gastric ulcers was 11 to 1. Indeed, the total number of duodenal ulcers found with the roentgen ray exceeded the aggregate of all other major lesions of the alimentary tube thus discovered, and the ratio of errors in the diagnosis of duodenal ulcer was lower than in the diagnosis of gastric cancer or gastric ulcer. To obtain a satisfactory degree of accuracy in this diagnosis I feel strongly that three factors are essential, namely, roentgenoscopic examination, a simple aqueous suspension of barium, and palpatory manipulation in order to exhibit the duodenum adequately.

For many years indirect and secondary phenomena, such as gastric hypertonus, hyperperistalsis, and hypermotility or obstruction, played an important rôle in the diagnosis. Although these signs may have a certain corroborative value, or direct the examiner's attention to ulcer, it is now well known that the basic sign is the abnormality of the duodenal contour and topography produced directly by the ulcer.

The normal duodenal bulb, as seen with the roentgen ray, has a standard appearance. It is symmetric, smooth of contour, and has no mucosal pits or irregularities. Persistent and unchanging deformity of the bulb is so nearly pathognomonic of ulcer that it is unsafe to attribute bulbar distortion to any other cause. It is true that periduodenal adhesions and duodenal cancer may also produce constant bulbar deformity, but cancer of the duodenum is so rare that it is a pathologic curiosity, and the frequency of deformity by adhesions has been greatly overrated. Adhesions are not uncommon, but, even when abundant and dense, they seldom distort the duodenal contour. An incompletely filled bulb is also irregular in shape, but the distortion varies in aspect and will not be deceptive unless a diagnosis is attempted on one or two films alone.

In perhaps three-fourths of all cases of ulcer, bulbar deformity can be demonstrated by ordinary measures and is so obvious that it can scarcely elude observation. Typical of such deformities are the clover-leaf deformity, the pine-tree appearance, and the serrated, asymmetric bulb, all of which have been made familiar by their common use as illustrations in papers on this subject.

A considerable minority of ulcers, not less than a fourth of the total, are in some degree difficult to discover, and can be demonstrated only by suitable technical maneuvers and close observation. This difficult group includes ulcers of patients who are hard to examine, ulcers accompanied by diffuse duodenitis, those which produce only slight changes in the bulbar outline, those which cause marked stenosis, ulcers near the apex of the bulb or beyond it, and those which are visible only as a dense fleck within an undeformed bulbar shadow.

Ordinarily the duodenal bulb will fill spontaneously with the aqueous suspension of barium and afford satisfactory roentgenoscopic study, but sometimes the pylorus fails to open widely enough to permit a sufficient outflow. In such cases the examiner, by grasping the abdominal wall with his right thumb below the lower border of the antrum and his fingers above its upper border, can usually force an adequate amount of barium into the bulb. Sometimes the patient is frightened and tenses his abdominal wall so rigidly that manipulation of the stomach is impossible. As a rule he can be made to relax by instructing him to drop his shoulders forward and to breathe deeply. If the patient has a broad habitus

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with a transversely lying steer-horn stomach the bulb often turns directly backward from the pylorus and is concealed by the antrum in the anterior view. In such instances, by turning the patient to his left, an angle will be found at which the bulb can be seen distinctly.

In cases of ulcer associated with diffuse duodenitis, the duodenum is irritable and empties so rapidly that it is hard to secure complete filling of the bulb. Usually the flow can be retarded by manual pressure over the duodenojejunal juncture.

Not rarely the deformity produced by an ulcer is so minute that it may escape observation. Although the small deformities may occur in any part of the bulb, they are more common along the basal border, and this portion of the bulbar outline should always be carefully inspected.

An ulcer producing marked obstruction near the pylorus is often hard to distinguish from a prepyloric lesion, because the bulb is not likely to be depicted. However, in obstructive duodenal ulcer the gastric antrum usually terminates smoothly and roundly, while in obstructive prepyloric lesions the antral termination is likely to be conical and irregular.

An ulcer at the bulbar apex often produces what seems to be a short bulb of normal contour. On closer observation it may be seen that the lumen beyond the apparent peak is greatly narrowed and the second portion of the duodenum descends steeply from it.

Although ulcers in the second and third portions of the duodenum are uncommon, these segments should always be inspected. An ulcer in this situation produces an irregular but marked narrowing of the duodenal lumen over a distance of 1 to 3 cm. The narrowing is localized, persistent in site and configuration, and thus differs from the normal lumen which varies in width throughout in ratio to the volume of flow.

Most interesting and most important among the ulcers which may be overlooked are those which are demonstrable only as a niche *en face*, or fleck. At the Clinic during 1930 the diagnosis was based on the fleck alone in about 15 per cent of the cases of duodenal ulcer. Whenever the duodenal contour appears to be normal the examiner should never assume that duodenal ulcer can be excluded until he has sought for and not found evidence of a fleck. Especially is this true in cases in which there is a large flaccid bulb. To elicit the fleck it is necessary to approximate the anterior and posterior walls of the bulb by pressure with the palmar surfaces of the fingers on the overlying abdominal wall. By this manipulation the barium content of the duodenum is so thinned out as to cast a faint shadow, and if a niche is present it will appear as a small, more or less rounded, dense fleck within the bulbar area. Barium penned up in the pyloric canal by manipulation may resemble a fleck but it changes in size and configuration. A true fleck niche maintains the same size, form and situation in successive views. The fleck is not only a thoroughly reliable sign of ulcer, but this evidence of a definite crater indicates that the ulcer is active.

In the foregoing, emphasis has been laid on the phenomena by which peptic ulcer may be identified and the simple measures by which the less pronounced signs can be revealed. It is implied with equal stress, however, that all roentgenologic abnormalities, whether gross or minute, must be interpreted with due caution, and that valid signs must always be distinguished from the transitory, variable and meaningless eccentricities which are so often encountered in the roentgenologic examination of the stomach and duodenum.

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URETERAL STONES—A REVIEW OF THREE HUNDRED CASES.

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This series of cases comprises those that we have treated during the nine year period from January, 1922, to January, 1931. I do not have in mind the presentation of anything more than an analysis of the cases and the making of some remarks on the subject in general.

Rapid advances have been made in the past fifteen years in the diagnosis and treatment of urinary calculi, but little has been added to our knowledge of the cause of the disease. We recognize a racial tendency to form stones; we know that stasis and infection play a role,

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particularly in the growth of calculi, but just what factors of physics and chemistry combine to form the nucleus of stones are poorly understood. Congenital malformations, by producing abnormal conditions of drainage, predispose to stone. Administration of drugs that produce abnormal alkalinity of the urine, when given over a long period, tend to cause the formation of phosphatic calculi. Six cases in this series appear to have formed stones while taking alkalies for duodenal ulcer. Prolonged immobilization in bed or in plaster casts have been observed to predispose to calculus formation. In two of our cases we believe this was the etiological factor. Each of the patients had been in bed in casts for fractured pelves for many weeks. There was no appreciable damage to the urinary tract at the time of injury and no history of any previous urinary disease or symptoms. In each case multiple phosphatic calculi were formed. Observation of these cases led us to the conclusion that in such patients it might be well to keep this possibility in mind and attempt to combat it by the use of forced fluids and the administration of drugs which tend to acidify the urine.

The Negro seems relatively immune to stone. Only three of this series were of this race. I do not recall ever having treated a case of renal calculus in a Negro.

Age, Sex and Side Affected

Ureteral stone is seldom seen in children. It seems that passage of the stone down the ureter is accomplished much more promptly and with less difficulty than in adults. Bokay[1] collected 1,836 cases of calculi in children in which 1,819 were in the bladder and only nine in the kidney. Bumpus[2] and Scholl, reporting 880 cases of ureteral stone, found five under the age of ten, and three in patients over seventy. Five hundred and thirteen of their cases were between the ages of thirty and fifty. Hinman reports operating on an eleven months old infant for stone, at which time he removed the kidney and ureter. There was only one child in our series—aged four—and this the only case under fifteen. The oldest was sixty-nine. The average age was thirty-four.

Men are more susceptible to stone in all portions of the urinary tract. Jeanbrau gives the proportion as 61 per cent males and 39 per cent females. Bumpus and Scholl give their percentage as 68 per cent males and 32 per cent females. Our series showed 69 per cent males and 31 per cent females. Impaction of stone in the lower ureter is more common in women and is due to the frequent obstructions to the ureter in the broad ligament area and also to the obstruction often caused by the uterine artery as it crosses the ureter. All of the low impacted calculi in this series were in women and, accordingly, all of the low ureterolithotomies were in this sex. This is a rather fortunate occurrence, since low operations on the ureter in men are much more difficult than in women because of the smaller capacity of the true pelvis in men.

There seems to be little choice of sides in the occurrence of ureteral stones. Most series report them as equal. In our series, 169 were on the left side and 131 were on the right. Bilateral ureteral calculi occurred in four of our cases.

Diagnosis

The first X-ray for renal calculus was made by McIntyre in 1894. He made a twelve minute exposure and had the diagnosis confirmed at operation. Brown, in 1893, was the first to catheterize the male ureter. So only one year separated the two achievements upon which modern urology has developed, and this was thirty-eight years ago. These two diagnostic agencies have advanced together until today the diagnosis of ureteral stone is relatively easy. The small percentage of calculi not casting shadows still gives some trouble. They are usually uric acid stones, and, luckily, they most often pass naturally. Geraghty,[3] in 1915, failed to find stones in 22.4 per cent of sixty-seven patients proven to have them. Braasch[4] and Moore, in the same year, placed their failures at 11 per cent. Israel, in 1925, stated that in Germany failures were between 1 and 4 per cent. Of course, the number of stones not found will depend largely on the preparation of the patient for the X-ray and the care with which the work is done. There will be fewer stones shown when only one plate including the whole tract is made. I have repeatedly observed that small stones in the lower ureter that do not show in the one large plate will later be shown up when focus is made directly over them. It would seem best, then, to routinely make two plates—the first to include the upper ureters and kidneys, the second the lower ureters, bladder and prostate. It is probable that in this country today, where

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the work is done under the best of conditions, less than 2 per cent of ureteral calculi fail to show.

Calcified lymph nodes lying along the ureter often cause confusion. When these nodes are in the mesentery they usually change position often and repeated plates will show them in different positions. When they are located along the lower ureter the waxed catheter is often used. We have more often employed the method suggested by Bransford Lewis—that of first making a plate with ureteral catheter in place and then, after removing the catheter, making the second plate with a more rigid instrument in the ureter. This will tend to straighten out the curves of the ureter. If the shadow follows the ureter it is stone. Kretschmer's method of making X-rays at various angles is valuable if the node is not too close to the ureter. In cases not suited to cystoscopy and ureteral catheterization, uroselectan may be used to advantage.

Results of Ureteral Calculi

When completely blocking the ureter, a stone may have the same effect as ligation, that is, distention of the renal pelvis with ultimate death of the kidney. This may occur in a few days. Quinby[5] has shown that if the obstruction be complete, the ureter dilates to a point consistent with an intrarenal pressure of 40-60 mm. Hg. below the systolic blood pressure, at which point secretion of urine stops and the organ gradually atrophies unless the pressure is relieved. I will show slides of one case in which a small ureteral stone has caused the death of the kidney. Fortunately such occurrences are rare because the obstruction is seldom complete for any great length of time. Knowing as we do that abnormal kidneys are more likely to form stones than normal ones, it would seem advisable to carry out at least a uroselectan study on all cases of ureteral colic, whether the stone is passed spontaneously or not.

Some degree of urinary obstruction is always produced by ureteral stones, and, whether complete or not, may cause anuria of the affected side. When infection is present, the added danger of pyelonephritis develops, which in many cases results in pyonephrosis.

The possibility of bilateral calculi must always be considered even though the symptoms are confined to one side. For this reason an X-ray study should be made of each case. If bilateral calculi are found, careful observation is necessary because of the possibility of anuria developing. When calculus anuria develops, immediate action is necessary. This condition constitutes one of the few urological emergencies.

Ureteral stones are responsible for a very large percentage of kidneys requiring nephrectomy. The stones may remain silent for years, but the destructive process goes on. The kidney shows remarkable ability to repair itself when the obstruction is removed, provided the damage has not gone too far. In order to protect the kidney, then, it is necessary to relieve these obstructions as early as possible.

Treatment

Just what percentage of stones pass spontaneously is, of course, unknown. Once a stone is found lodged in the ureter and bilateral calculi are excluded, the patient may be observed for a few days on palliative treatment. After this time, if it shows no tendency to move, some form of treatment should be instituted, directed towards facilitating its passage. This is especially true if infection exists. During the period of observation studies of the blood and urine are made in order to establish facts regarding the functional capacity of the kidneys. As stated above, uroselectan studies may disclose interesting and valuable data concerning the kidneys.

Unless the stone is very large or very rough, and unless severe infection is present, removal by cystoscopic manipulation should be tried. This method of ureteral dilatation and the injection of oil was popularized by Dr. A. J. Crowell[6] and credit is due him for more or less standardizing the treatment. Three objectives are reached when a catheter is passed above the stone,—drainage is secured, pain relieved and dilatation of the ureter at the site of the stone together with a relaxation of muscular spasm of the ureter. A very large percentage of calculi can be made to pass by this method alone; 191 out of 300 cases in our series are known to have passed their stone after one or more treatments. Thirty-eight additional cases who disappeared during treatment—probably because of passage of the stone—might be added to the above number. The method aided in the removal of twenty-five additional stones which also required the use of operative cystoscopy in addition to the usual treatment. This brings the total to 254

cases in which the passage of stone was aided by cystoscopic manipulation.

Several mechanical removers have been produced. Bransford Lewis, Council, Livermore and several others have devised instruments for ensnaring the stone and removing it. Robert McKay has recently brought out a remover in which several threads are arranged on a filiform for the purpose of passing the stone and then entangling it in the threads on removal. I have employed it several times and have been successful in removing one stone with it. In general, I am opposed to the use of the mechanical removers, especially the metal ones. In most of them it is impossible to release the stone when it is once caught. They should be used only after thorough dilatation of the lower ureter by the Crowell method.

Operative cystoscopy is employed in cases of stones embedded in the ureteral meatus. Meatotomy with scissors or a high frequency electrode may be done and the stone released. Sixteen cases of our series were handled with this procedure.

When is open operation for ureteral stone indicated? In general, the following points have guided us: All other factors being favorable to operation, we have leaned toward operation—when the stone is of large size, when removal, if accomplished at all, would require too many treatments; stones of smaller size if much infection be present; those that cannot be passed by catheters after repeated efforts; stones of moderate size located in the upper or mid-ureter that show little response to treatment; all cases of bilateral stones that cannot be dislodged into the pelvis or adequately drained with catheters. The functional capacity of each kidney must be considered and proper methods directed towards relief of the best kidney first.

Ureterolithotomy is not an operation of much risk. We have had no operative mortality from it. It can usually be done fairly quickly and requires only about ten days postoperative care. In general we have favored operation in cases which apparently would require too much instrumentation and in cases that we think instrumentation might result in too much infection. Sterile cases may become infected during ureteral manipulation, and the longer the stone remains in the tract the greater the danger of complications.

We classed thirty-one of our cases as operative. Two refused operation and three of the operations were pyelotomies for drainage. This leaves twenty-eight cases which required operation for removal of the stone, or 9.3 per cent of the series. Caulk[7] gives the percentage of required ureterotomies as 7 per cent. The Crowell Clinic series, as reported by Squires,[8] shows a total of 606 cases in which operation was advised or done in 9.24 per cent. This places the operative percentage in the Crowell Clinic series and ours at approximately the same, while both were higher than Caulk's estimate.

ANALYSIS OF TREATMENT OF 300 CASES

Stones passed while under observation without treatment	8
Stones passed after one or more treatments	191
Cases requiring ureteral meatotomy or use of forceps	16
Stones removed by mechanical stone remover	9
Pushed back into pelvis and left	7
Disappeared under treatment	38
Operated for stone or drainage	29
Operation advised and declined	2
Total	300

In these operative calculi uroselectan finds one of its fields of greatest usefulness. In this series we were able to employ it only a few times, since it was available for only about six months of the period.

ANALYSIS OF OPERATED CASES

High Ureterolithotomies	8	Right	4
		Left	4
Mid-Ureterolithotomies	11	Right	7
		Left	4
Low Ureterolithotomies	6	Right	3
		Left	3
Suprapubic Cystotomies	1		
Total	26		
Pyelotomies for drainage	3		
Total operations	29		

MORTALITY

In the 300 cases there were four deaths. One of these occurred two days after a ureteral dilatation and was a cardiac death in a woman fifty-two years of age. The cause of death was myocarditis. Another was a man with bilateral stones with advanced cancer of the bladder. Death was caused by carcinoma metastasis. This case was only given palliative treatment. This leaves a total of two deaths that we have classified as "kidney deaths" or those due directly to the stone. Both were women. One was a long standing case of bilateral impacted stones of the lower

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ureter. Two stones were removed from the right ureter, but death followed two months later or two weeks after operation for removal of the stone in the left ureter. Death was due to renal insufficiency caused by bilateral advanced renal infection. The other death was due to acute, severe infection in a woman fifty-two years of age, caused by impaction of a stone in the upper left ureter. The patient had been ill ten days before admission to the hospital in a very toxic condition. Emergency nephrotomy was done. Diffuse pyelonephritis with multiple staphylococcus abscesses was found. Death occurred a week later from sepsis. Both of these cases occurred five years ago before we began the use of spinal anesthesia and the employment of intravenous glucose to the extent that we do at present. It is probable that refinements in diagnosis, anesthesia and continuous intravenous glucose medication may have saved these two cases.

Accidents From Cystoscopic Manipulation

There were three occurrences in this series that might be classed as accidents. Only one was serious. In this case the left ureter was punctured by a catheter carrying a stylet. I have very seldom employed stylets in ureteral catheters and have not seen fit to do so at all since this experience. Infection in the tissues around the ureter occurred, the patient was very ill for two weeks but recovered without any operative interference and has remained perfectly well. This is the only case of its kind I have ever encountered, but Hunner[9] reports twelve such accidents of his own and nine by his assistants.

The second case was that in which a number six catheter was passed by a stone in the lower right ureter. There was a marked hydroureter above the stone and the catheter, being more flimsy than is usually the case, curled up in the ureter so that when an effort was made to remove it, it tied into a knot. It was most difficult to remove, but after remaining in place thirty-six hours and with the use of more traction than I desired to use, it finally slipped by the stone. There was considerable hematuria and pain and some fever for a few days but otherwise there were no complications. The stone passed several days later.

The other case was that in which a stone in the lower left ureter was grasped with a mechanical stone remover. It was a moderate sized stone and the ureter had been dilated several times previously but three days were required before the instrument could be withdrawn. The patient weighed 280 pounds and operative removal would have been difficult. Strong, steady traction finally caused one blade of the instrument to break (luckily proximal to the patient) and the instrument was entirely removed. The stone passed ten days later.

Hysterical Lithiasis

Mention might be made of the type of case referred to by Braasch[10] as "hysterical lithiasis." By this he refers to those cases of malingering in which the patient feigns the passage of stones. He reports nine cases that have occurred at the Mayo Clinic, eight of whom were women. Two of the patients had introduced calculi into the bladder. I have treated two women who presented stones that they claimed to have passed, which, on examination, proved to be false. As is usually the case, they gave the history of repeatedly passing stones. One of the women brought with her eight or ten small gravel, some of which looked like bits of concrete, while others resembled small pebbles. When confronted with the statement that she could not have passed the material, she became angry and disappeared. The second case was more difficult to handle. She was under observation for eighteen months—being seen at intervals of several months. Each time she was referred by her family physician because of kidney colic and the passage of stones. Complete urological examination was repeatedly negative. She was asked to bring in the next stone she passed. In a few days she returned with four pebbles. Privately her husband was assurred that she could not have passed the stones but he could not be convinced because he claimed to have heard the stones strike the vessel when they were passed. The woman had secreted two stones between the labia and allowed them to fall at the opportune time. This woman was finally operated upon and nephrectomy done by another surgeon, which goes to show to what extent these malingerers will carry their fraud in an effort to impress those about them. The last I heard of this case was to the effect that she was having kidney colic on the other side.

It finally came to light that the motive in

each of these cases was the same. Both lived in the country and wished to move to town. Their husbands were opposed to moving. The drinking water contained limestone and the wives claimed that the water was causing them to form stones. In this way they tried to impress upon their husbands the necessity for moving.

Summary

Three hundred cases of ureteral stones are reported. Analysis of the treatment and results are given. Three cases of accidents occurring during cystoscopic manipulation are reported and two cases of hysterical lithiasis mentioned.

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EMOTIONS AND CHARACTER AS RELATED TO ART IN MEDICINE.

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Though the practice of medicine has risen from a past art composed of many fallacies to a science of great accomplishment, yet, in the application of modern medical knowledge, art, classified by the light of research, is still needed.

The consideration of life as a whole, its physical, mental and spiritual make-up, is necessary in the application of treatment, as the inanimate facts of science are applied to highly developed living organisms, different in individuality, variously receptive to influence, and complex in reactions.

Though much has been discovered about human life in scientific studies, there are great unknown fields, such as knowledge of mental and nerve functions and influences.

The emotions, such as fear, hate, joy, greatly affect human life. Elements of character embodied in bravery, faith, temperance, love of truth, law and order, markedly influence our being, and the opposite has its bad effect; so the emotional and character have their bearing upon treatment.

It is known that fear, hate and anger change internal secretions, altering physiology, and such alterations, if continued over a period of time, cause functional trouble or disease. Diseased conditions arise from injured or altered tissues and infections, acting as primary or secondary causes. Perverted function is often the incipiency of disease, and most frequently the general practitioner has to deal with functional troubles that may cause the same suffering as diseased conditions which, unless relieved, will in some cases take on the form of pathology. Very varied, numerous and intricate are the influences that affect health. Emotion, the mental attitude and the character of one's make-up, as well as the character of his conduct and thought, are some of the sources from which these influences spring. That the presence of a doctor in whom a patient has confidence often brings relief to one's suffering from functional trouble, or even helps him though afflicted with real disease, is probably due to a psychic influence bringing relief through a readjusting of nervous influences coming from the mind.

That physicians of the past who have had considerable reputation for their accomplishments must have gained these reputations in part, at least, by confidence inspired in the patients, for forty or fifty years ago there was little known of real curative value as compared with the present.

We must not lose sight of the fact, however, that the character, ability and personal qualities that inspired confidence in the patient, and brought relief, was a big asset and a means of relief of real value, standing with many of the modern methods of surgery and therapy that are more tangible as curative means.

We know that the dread of a surgical operation not infrequently leads to bad post-operative results, and modern surgery realizes that it is not only a perfect technique and biological

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principles carried out, but the state of mind of the patient that has to be considered and corrected, if need be, to get results.

The thyroid and perhaps other glands of internal secretion are often affected during pregnancy. How much looking forward to the suffering and danger of birth has to do with this and with some toxemias of pregnancy is not known; but that such toxemias are often accompanied by high blood pressure is suggestive, as raised blood pressure may ensue from tension brought about by fear and dread of a condition.

Indigestion and metabolic troubles frequently arise from a disturbed mind and from lack of relaxation sufficient for the exchanges of the body, and certain emotions may alter these functions materially. The worried or emotional mother may have a colicky, underdeveloped baby, caused by the alterations of her milk, brought about by such a state of mind.

The infants average life has been lengthened by administering proper food, care, etc., but tension arising from rapid living of the present that brings worry and care does not affect the infant, so the question of extending the life of an adult is involved by the above problems that do not apply to the child. It is in the field of emotion and manner of living that we will have to search for some of these causes.

Fear in its various forms is a curse to many a life. The more ignorant and superstitious people are the more besieged by this curse. Civilization and education in a degree eliminate the harmful effects of emotions, but in some ways only change its form. Fear of failure, competition and influences of individuals or organizations are some frequent modern ways this is shown. Worry, so common, comes from fear or lack of confidence. Often fear haunts the demented, indicating that either this may have been the cause of mental derangement or perhaps aided in bringing it about.

There were many young men cast aside as physically unfit by the draft boards in our last war, though many of these men could have been physically fit if they had adopted the proper course of living. "Honor thy father and thy mother that thy days may be long" is a command that has a far-reaching meaning in the development of youth for fit citizenship as well as long life. The child that is taught to obey, honor and respect his parents, not only more likely makes a good citizen, but has inground into him the principles of self-control, obedience and service for others that makes him respect the rights of his fellowman, and the length of days added to his span of life comes from a training that results in a better correlating the forces and energies within to external influences.

Character, controlled and operated by the correct ideas of truth, solves many a problem of health. It is often where one leaves such control that harm comes to body or mind. Facing facts and rightly adjusting one's course to the same is something that many shrink from. Something goes wrong with one and he dreads what the physician might reveal if he knows his condition. He does not wish to be inconvenienced by special treatment or doing unpleasant things, so life drifts on until harmful results come from evasion and delay.

Again, many a life is a misfit into its surroundings and occupation, though probably from no fault of the person, but, from the physician's viewpoint, such a fact should be considered, as this misadjustment may cause inertia, weariness, irritation and other symptoms of poor health. Such a case is as a piece of misadjusted machinery that is ground out by improper fitting and wrong contacts. Love for the work one does or the interest in things and people, full confidence in the Divine Ruler, not only gives joy to life, but brings out its best efforts, and adjusts its intricate machinery to better overcome defects and attacks of injurious forces; for evasion of truth causes many unhealthy diversions and alterations in function besides the evils of suppression. So the training and surroundings of a patient from infancy have their bearing upon the application of treatment. The manner of patient we have in hand should be considered and his need for, or reaction to, certain treatments.

The remedy may be outside of medicine, the laboratory or knife and more tangible things, or may be more complete with these things introduced to the patient as best fits his individuality, in no instance, however, losing sight of individuality, as human beings cannot be treated successfully as a unit or mass. Such a conception of medical art elevates it to a higher position and brings to science a greater field of usefulness by a proper and more complete application of knowledge.

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U. S. P. AND N. F. PREPARATIONS VERSUS PROPRIETARY REMEDIES.

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Due to advances in synthetic chemistry and to the activities of pharmaceutical manufacturing houses the multiplicity of remedies offered for the treatment of disease has become so great as to lead to almost hopeless confusion on the part of both physicians and pharmacists.

One of the important tasks of the revision committee of the pharmacopoeia is that of choosing from this endless list, agents of known therapeutic value which are considered essential in the treatment of disease. The pharmacopoeia is intended to be a book of medical and pharmaceutical necessities. It is no longer subject to the criticism that was directed against it prior to the appearance of U. S. P., X, namely, that pharmacists played too large a part in determining the policies with regard to the content of the book. The committee on scope now consists of seventeen physicians and only six pharmacists. Thus it become apparent that the medical profession is responsible for selecting the products which it deems indispensable in the treatment of disease. This fact should commend the pharmacopoeia to the practicing physician.

The National Formulary is prepared by a committee of pharmacists chosen by the council of the American Pharmaceutical Association. It consists largely of drugs and formulas that were formerly official in the pharmacopoeia but which have been deleted because they are no longer considered medical necessities. This does not mean that these products are not highly useful in the treatment of disease, but rather that their use is inclined to be local instead of national.

Too much emphasis can hardly be placed upon the importance of official remedies, that is, those of the U. S. P. and N. F. They have passed through probationary periods of ten to twenty years before being granted recognition. Their virtues have been established by years of experimentation and use both before and after they have been given official status. Their advantages and disadvantages are matters of record in medical literature.

Contrast with this the exploitation of the thousands of synthetics and proprietaries with which the medical profession is deluged at the present time. Some of them are new, many are merely mixtures of well-known products which the physician can obtain by writing a simple name coined by the manufacturer instead of writing an original prescription which his pharmacist can compound.

The use of simple names for synthetics and proprietaries often defeats the aim of the physician by leading to self-medication. The patient reads the name of the remedy, asks for it by name, and then proceeds to tell his friends and acquaintances that his doctor prescribes that remedy for the treatment of a certain condition. In a short while this name becomes public property, with the result that laymen buy and use this remedy without advice from the medical profession. The physician who prescribes official preparations or combinations of them under their Latin titles, abbreviations or chemical names as given in the U. S. P. or N. F., aids materially in reducing self-medication by the laity.

It is surprising how many unofficial synthetics are closely related to the official ones, and how many proprietaries are for the most part mixtures of official products. The pharmacist can prepare almost any mixture the physician wishes and can usually dispense it at less cost to the patient than the use of a proprietary would necessitate.

The wide use of proprietary remedies has undoubtedly disturbed the spirit of mutual understanding that formerly existed between physicians and pharmacists in that it makes less necessary the frequent interviews they formerly enjoyed. Regardless of the many items of merchandise now carried in the average drug store, the pharmacist of the future seems destined to be of greater service to the physician than he is at the present time. Beginning one year hence, all of the recognized schools of pharmacy in America will offer a minimum four year course in pharmacy. It will consist of sound education and of good pharmaceutical training. This will undoubtedly mean fewer pharmacists, but better trained pharmacists.

The purpose of this paper is twofold, namely: (1) to urge a wider use of official preparations in prescription practice; (2) to express the hope that physicians and pharmacists in Virginia may work in closer cooperation to the end that their common cause, the promotion of public health, may be definitely advanced.

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ASCHHEIM-ZONDEK TEST FOR PREGNANCY.*

By JOS. J. MUNDELL, M. D., Washington, D. C.

The technique of the test is as follows: The first urine voided in the morning is collected in a clean bottle. One c.c. of tricresol to 25 c.c. of urine may be added to retard bacterial growth. If the reaction is not acid, acetic acid should be added and the urine filtered. Five female mice, three to five weeks old and weighing from six to eight grams, are used for each test. Five mice are used because there is a 10 to 15 per cent mortality, and also because an occasional mouse will not react. The mice are injected subcutaneously twice a day, each mouse receiving 0.3 c.c. of urine at each injection. One hundred hours from the first injection the mice are killed with illuminating gas and autopsied and the ovaries examined. In the positive test the uterus, tubes and ovaries are greatly congested and there is a marked maturation of the Graafian follicles. Hemorrhage in the follicles produces the characteristic so-called blood points. Also there is seen marked luteinization of the corpora lutea. These changes are readily seen with the naked eye and are very pronounced. Of course microscopical examination is also made. To date we have had 200 tests with 100 per cent accuracy,—that is, the diagnosis has been proven by further clinical observation in every case.

The laboratory was not furnished any data with the specimens that were sent in, and in many instances urines from non-pregnant women were forwarded in order to check the efficacy of the test.

In one case the urine one day after the first missed period was negative but was positive on the tenth day.

Another case was negative five days after the first missed period but positive on the fifteenth day. Thus our earliest positive case was ten days after the first missed period. Also two extrauterine pregnancies from six to eight weeks' gestation were positive.

It is said that the test is positive in hydatidiform mole and chorioepithelioma in which it is of inestimable value in determining whether all live chorionic villi have been either expelled or removed by curettage, for so long as any viable villi remain the test will be positive.

Our series simply confirms the reports of numerous other investigators. Though the procedure was introduced less than three years ago, it has been universally accepted as valuable diagnostic aid comparable to other well established tests.

However, I would offer a note of caution in that we should not be over-enthusiastic, but rather wait for the element of time before accepting it whole-heartedly. If time proves it to be dependable, it will be a boon to us in many instances that are obvious. Had the renowned Playfair had access to this test he would have been saved humiliation as well as a good sized fortune. Almost at the end of his illustrious career and with about $100,000 which he had been able to save as his old age competence, he was consulted by a woman whose husband had been in foreign lands for a year or more. He diagnosed her condition as pregnancy and the diagnosis was broadcasted. In the course of time it was proven that she was not pregnant but had a fibroid tumor. The lady's husband sued Playfair and obtained a judgment for $65,000.

The explanation of this test is that it is dependent upon the hormone or hormones of the anterior lobe of the pituitary which are present in abundance in the blood and urine during pregnancy, especially in the earlier months.

The recent epochal work upon the pituitary has created a furor in medical annals particularly affecting gynecology and obstetrics, as evidenced by the countless number of articles appearing in the current literature.

Investigators are not in accord as to just what these hormones are that produce this reaction. Some among them think that there is only one, acting differently under certain conditions, but the majority feel that there are at least two or more. Aschheim and Zondek state that there are two, which they designate Prolan A and Prolan B, the first acting upon the follicles, the second causing the excessive luteinization. As a result of these investigations, the pituitary has come to be known as the motor and regulator of the ovary.

We of the present day and age are apt to accept ourselves with complacency and regard the recent advances in endocrinology with much pride, but it is a sad commentary that an explanation is just forthcoming of conditions that have been recognized for many centuries. For instance, there are many biblical references that very plainly describe endo-

*Read at the annual meeting of the Medical Society of the District of Columbia, May 6, 1931.

crinological mal-adjustments. In the description of Nimrod, Samson, Judith and Jezebel one can well imagine that they showed evidence of endocrine dysfunction. The hypo- and hyper- influence of the pituitary likewise can be visualized from the description in Genesis, chapter 25, of the twins Esau and Jacob. The former, at birth, was red and hairy and grew to be a mighty hunter and a man of the fields, whereas Jacob was the direct opposite, being a smooth man who lived in tents.

Also in the well known incident in St. Mark, chapter 5, verse 25: "And a woman who was under an issue of blood twelve years and had suffered many things from many physicians and had spent all that she had, and was nothing the better but rather the worse, when she heard of Jesus, came in the crowd behind Him and touched His garment, for she said if I touch but His garment I shall be whole. And forthwith the fountain of her blood was dried up and she felt in her body that she was healed of the evil."

We now know that this woman could have been cured without resort to the supernatural by an intrauterine application of radium, and, too, we now know that her bleeding was due to the over-activity of one of the hormones of the anterior pituitary, but, just think of it, it has taken 2,000 years to find it out.

These tests were done at the Naval Medical School through the courtesy of Captain C. S. Butler, the Commanding Officer.

1616 *Rhode Island Avenue, Northwest.*

THE EARLY DIAGNOSIS OF CARCINOMA OF THE BREAST.*

By I. A. BIGGER, M. D., Richmond, Va.

The education of the public to the importance of early diagnosis of cancer is creating difficult problems for the physician. This is especially true with regard to breast lesions. Until recent years he did not see the patient until the lesion was well advanced and the diagnosis obvious. Bloodgood's early figures show that of the patients presenting themselves for examination of the breast 80 per cent had carcinoma and 50 per cent of these were inoperable. His recent figures, however, show 17 per cent to be malignant, 18 per cent benign, and 65 per cent non-operative. Only 5 per cent of the malignant cases are inoperable. Since patients are presenting themselves earlier, it is essential that the physician be prepared to diagnose them. The textbook description of carcinoma of the breast is rapidly changing from that of an advanced to that of a relatively early lesion. Unfortunately too much stress is till placed on some of the late signs of cancer.

The diagnosis of carcinoma of the breast must be made largely on the basis of the physical findings. The family history is of no importance in the individual case and even the personal history is of little importance except in so far as it relates to the duration of the tumor and the amount and type of pain. The longer the duration of the lesion the greater the possibility of its being benign. Cheatle believes that a stabbing pain is frequently an important early symptom, but the majority of observers consider pain of slight importance.

Physical Examination. In examining the breast it is necessary to have both breasts adequately exposed, so that they can be examined and compared. Careful inspection should be made with the patient in both the upright and recumbent postures, particular attention being paid to the nipple, with regard to its size and position. The relative elevation of the nipples should be determined with the patient in the erect posture. The skin over the breast should be inspected to determine discoloration, edema,

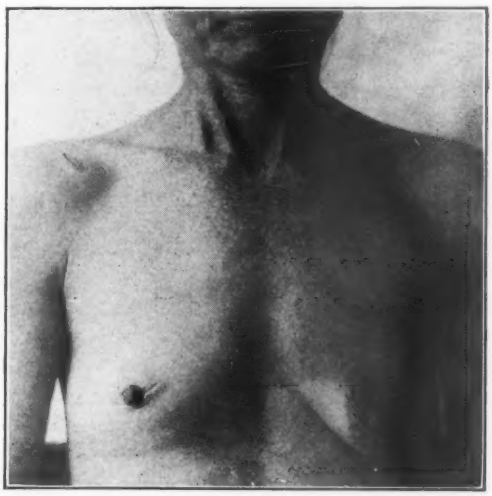

Fig. I.—Moderately advanced carcinoma of the left breast.

*Presented before the Post-Graduate Medical Society of Southern Virginia, May 19, 1931.

From the Department of Surgery, Medical College of Virginia.

and dimpling of the skin. The chief point of interest in the inspection of the breast with the patient in the recumbent posture is its contour, as a tumor of small size will frequently show up as a definite elevation.

Palpation of the breast should be done with the palmar surface of the fingers against the chest wall and also with the breast tissue caught up between the thumb and fingers. When the breast is palpated between the thumb and fingers the individual breast lobules are considerably magnified and are apt to feel like distinct tumors. However, when the breast is palpated between the palmar surface of the fingers and the chest wall these lobules are less prominent. A nodule felt by this method of palpation is, therefore, significant. If such a nodule is felt, it should be examined to determine its mobility. Benign, solid tumors of the breast, especially those that are encapsulated, are freely movable and malignancy may be readily ruled out. Cysts are less freely movable but are not completely fixed to the surrounding breast tissue. Furthermore, if the cyst is superficially located, fluctuation can often be made out.

Malignant tumors of the breast, on the other hand, are well described as being "frozen into the surrounding breast tissue." If the nodule appears to be adherent, its relationship to the skin and underlying structures should be determined. The adherence to the skin can be determined either by carefully displacing the tumor and noting the presence or absence of dimpling, or by lifting the skin away from the breast tissue and tumor. The appearance of dimpling of the skin by either of these manoeuvers is of great significance. It should also be determined whether or not displacement of the tumor causes retraction of the nipple.

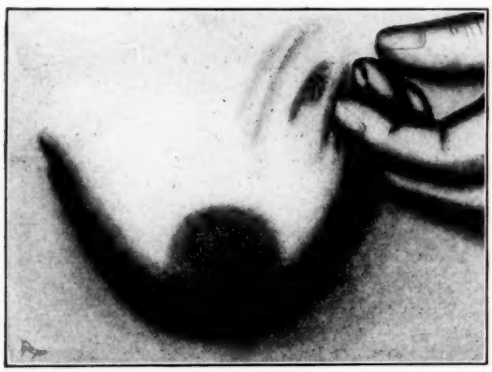

Fig. II.—Dimpling of the skin on displacement of the tumor shown in early carcinoma of the breast.

Transillumination of the breast should be carried out as described by Max Cutler, as in this way solid and cystic tumors can frequently be differentiated. It is necessary to have a strong white light and the patient must be placed in a completely dark room. The portion of the breast under suspicion is then transilluminated by placing the light beneath the breast and determining whether or not there is opacity in the region of the nodule. If the nodule is a simple cyst, transillumination will be as complete as, if not more complete than, through the surrounding breast tissue. If the nodule is a solid tumor it will not transilluminate. Papillary cystadenomas and cysts containing blood or milk do not transilluminate well.

The axillae are next examined for enlarged lymph glands and a definite routine should be developed for this examination. Glands in the loose areolar tissue may be displaced and not felt when the fingers are placed in the axilla and pressed upward and inward. If, however, the arm is abducted and the examiner's fingers placed high in the axilla and the arm then partially adducted and the fingers swept downward against the chest wall, any enlarged glands in the loose areolar tissue will be caught between the tips of the fingers and the chest wall. After the axillae have been examined, the supra-clavicular region should be palpated.

The skin over and surrounding the breast should be examined for metastases. Skin metastases are more easily felt than seen and, if the fingers are run lightly over the surrounding skin, the small, hard, intracutaneous nodules can be palpated.

If the nodule in the breast is apparently malignant, the upper right quadrant of the abdomen should be palpated to determine the size and consistency of the liver. The examination should be completed by an X-ray of the chest.

If the nodule appears to be a definite tumor and is not obviously malignant, it should be excised for gross and microscopic examinations. It is important that the patient be prepared for a radical operation before excision of the tumor. If a definite diagnosis cannot

be made on the basis of the gross appearance, microscopic examination should be made, and if the tumor is malignant, radical operation carried out immediately.

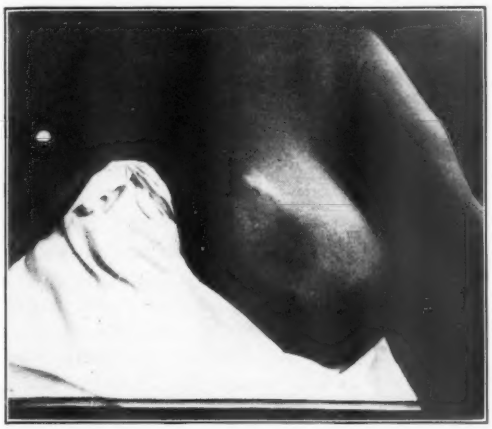

Fig. III.—Orange peel skin indicative of late lesion.

Differential Diagnosis. There is little difficulty in the diagnosis of benign, encapsulated adenomas, for they form sharply defined, freely movable tumors. Difficulty is frequently experienced in differentiating deep-seated cysts, localized non-encapsulated mastitis, and traumatic fat necrosis from malignant tumors. Superficially located cysts can, as a rule, be diagnosed on the basis of fluctuation, lack of firm attachment to the surrounding breast tissue, and especially by transillumination. If a tumor in the breast shows fluctuation and transilluminates it is in all probability a benign cyst. If it apparently fluctuates but does not transilluminate well, it may be either a benign or malignant cyst. A malignant cyst is filled with either a blood-tinged fluid or a thick, grumous material which does not transilluminate.

It may be difficult to differentiate a deeply located cyst from a solid tumor, as it is often impossible to demonstrate fluctuation. If the breasts are pendulous, the cyst can usually be manoeuvered into a position where it can be transilluminated. If the breasts are not pendulous, transillumination is apt to be unsatisfactory.

A cyst, as a rule, will not show evidence of adhesion to the skin and underlying structures; but if it has undergone an inflammatory change, dimpling of the skin may be produced on displacement of the tumor. In such a case, a definite differential diagnosis cannot be made without surgical incision.

Traumatic fat necrosis may be diagnosed easily, where there is a history of recent injury with the appearance of a lump at the point of injury, located immediately beneath the skin and accompanied by pain and tenderness. If, however, the area of necrosis is more deeply located and there is no definite history of injury, differential diagnosis may be difficult and can often be made only by exploratory incision.

The nodule in the breast which it is most difficult to differentiate from carcinoma is the localized, non-encapsulated area of chronic mastitis. It often is adherent to the skin and may show retraction of the nipple. It is not freely movable in the breast tissue and is apt to show little pain or tenderness. If it is associated with multiple nodules in both breasts, a chronic cystic mastitis should be strongly

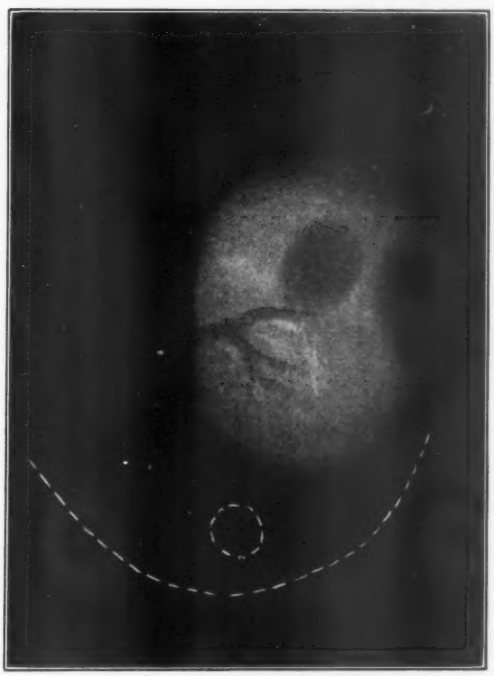

Fig. IV.—Sketch showing the appearance of carcinoma of the breast on transillumination.

suspected. If not, a definite diagnosis can be made only by exploratory incision, and even then difficulty may be met with in determining the question of malignancy.

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SUMMARY. The progress in the education of women as to the importance of the early recognition of a nodule in the breast has greatly increased the physician's difficulty in the differential diagnosis. Fortunately, it is relatively rare to have an advanced carcinoma of the breast—in the stage in which diagnosis is obvious—come in for treatment. As the percentage of patients with early and benign lesions appearing for examination increases, the difficulty of diagnosis is increased.

The diagnosis has to be made largely on the basis of physical examination and, in questionable cases, on the basis of the gross and microscopic appearance of the tumor. The most important single physical sign of malignancy is the "freezing of the tumor to the surrounding breast tissue." Other important signs of malignancy which are apt to be present even in early cases are dimpling of the skin on displacement of the tumor and retraction of the nipple on displacement of the tumor. It is important to distinguish between dimpling of the skin produced by displacement of the tumor, due to the shortening of the fibrous trabeculae in the subcutaneous tissue, and that due to lymph edema. The former is apt to be present in early carcinoma of the breast, while the latter is a late sign.

Axilliary, supraclavicular, and skin metastases, and fixation to the chest wall, all are late signs and, while they make the diagnosis easy, they also make the prognosis poor.

Finally, in questionable lesions, it is essential that gross and microscopic examinations of the tissue be made and immediate radical operation done in case of malignancy.

DEFORMITIES OF THE COLON: LOW CECUM WITH ABSENCE OF ASCENDING COLON AND HEPATIC FLEXURE: CASE REPORT.

By JOHN A. REED, A. B., M. D., Washington, D. C.

Clinical Professor in Medicine, George Washington University School of Medicine.

Deformities of the colon are in the main congenital and are not particularly uncommon, having been described at some length by many authors. The clinical interest in these cases lies in the associated symptomatology, prognosis, treatment, and the bizarre visualization by roentgenological study; their clinical importance is a knowledge of their existence prior to operative intervention in concurrent abdominal surgical conditions. The deformity described as the low cecum is one of the most common of all colon anomalies, occurring in about 18 per cent, according to Kantor,[1] of all deformities of this part of the bowel. The following case, however, is presented because of its association with an absence of the ascending colon and hepatic flexure.

CASE REPORT

M. R. H., age 31, male, white, married, occupation fireman.

History of Chief Complaint and Present Illness.—He was first seen by me April, 1931, with a chief complaint of diarrhea. This condition first began in 1926 while at work in the repair shop, coming on rather suddenly with six or seven bowel movements a day, watery in character, accompanied by occasional abdominal cramp, but no blood or mucus. The movements apparently came on any time of the day. Shortly after the onset of these symptoms, he left the repair shop, and the symptoms stopped. No connection, however, could be established between the symptoms at that time and his environment. In May, 1928, the diarrhea began again with six watery movements a day, similar to the previous attack.

Fig. 1.—Visualization of cecum, transverse colon, and splenic flexure six hours after ingestion of barium meal.

This condition has continued since with varying periods of freedom from the diarrhea and having apparently normal formed movements. He now sometimes feels weak, and for three weeks prior to his first visit believes that he had lost some weight.

Previous Illness.—With the exception of measles in childhood, mumps, about nine years ago, and scarlet fever about six years ago, there is no pre-existing illness other than described under history of present illness. No other data obtained of the previous history is relevant.

Family History.—Mother, living and well, age 52; father died at the age of 38, cause given as "leakage of the heart". Two brothers are living and well, no brothers or sisters dead. There is no evidence revealed under family history suggesting any congenital deformities in the forebears.

Physical Examination. — Well nourished, muscular man of the sthenic type. Eyes react to light and accommodation. No evidence of infection about the teeth, tonsils, or sinuses. Tongue clean. Temperature, pulse, and respiration normal. No glandular adenopathy.

Fig. 2.—Twenty-four hours after ingestion of barium meal, showing cecal residue and relation of cecum to sigmoid and rectal pouch.

Joints and musculature normal. Lungs and heart normal. Abdomen is rather hard due to splendid muscle development of recti, slight tenderness over descending colon. No abnormalities of spleen, liver or kidneys. Prostate gland normal. Extremities normal. No neurological or psychiatric manifestations found. Proctological examination was normal except

Fig. 3.—View of entire colon visualized by barium enema, showing low cecum, an apparent filled retrocecal appendix, no ascending colon, or apparent hepatic flexure.

for the presence of a small polyp at the rectosigmoid juncture.

Gastric Analysis.—(After Ewald Test Meal). Free hydrochloric acid 42, total acidity 50, benzidine one plus, microscopically negative.

Urinalysis.—Straw, clear, acid, specific gravity 1020, no albumen, sugar, diacetic acid, pus, casts, or red cells.

Feces.—Brown, semi-formed stool, small amount of macroscopic and microscopic mucus, no macroscopic or microscopic blood, considerable granular debris, some undigested vegetable material, occasional undigested starch granule (iodine stain), few undigested meat particles, few fatty acid crystals, considerable neutral soaps, abundance of blastocystis hominis, no ova or protozoa. Culture: streptococcus viridans, bacillus coli communis (nonhemolytic and hemolytic), bacillus coli communis and other saphrocytes.

Roentgenological Study.—X-ray of the gastro-intestinal tract shows no evidence of organic pathology. There is a congenital ano-

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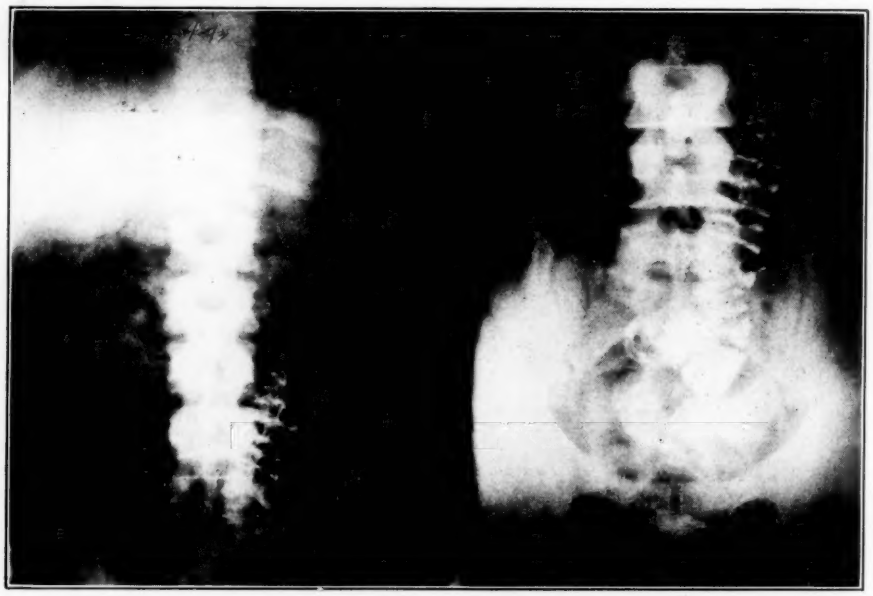
maly in that there is apparently no ascending colon or hepatic flexure. The cecum is low, being visualized just above the symphysis. The transverse colon seems to go directly upward from the cecum from the midline at a point about the middle of the sacrum to the splenic flexure. The appendix is well visualized and is apparently retrocecal. Fluoroscopic study of the colon with a barium enema: about 800 c.c. of barium mixture was used, and the colon filled from rectum to cecum. The splenic flexure was unusually high, extending well up to the level of the diaphragm and could not be palpated on account of the lower ribs, but moved about three inches with each respiratory cycle. The transverse colon extended downward into the pelvis and was grouped together with the cecum below the brim of the pelvis. Flat plate before defecation demonstrates the same thing as was seen under the fluoroscope. The appendix was visualized. Flat plate after defecation gives no additional information. Summary of barium enema study: Displacement of the splenic flexure upwards, with a low cecum, and absence of hepatic flexure and ascending colon.

Diagnosis.—The diagnosis in this case, of course, resolves itself into an interpretation of the roentgenological study. The clinical tentative diagnosis was irritative colitis of a spastic type probably with exogenous etiology.

Treatment.—The treatment of the case presented was symptomatic, consisting of a bland, non-irritating, non-residue diet, and intestinal antispasmodics, and sedatives. No measures were instituted for the correction of the congenital abnormality, as that in itself was not incapacitating the patient. At the expiration of two weeks the acute irritative process was relieved with normal stools evacuated.

Comment

One expects to find structural and anatomical abnormalities of the colon, such as described, associated with malstatic states, as suggested by Mills and Soper,[2] or acompanying the so-called asthentic habitus,[3] or visualized in an abnormal position, sometimes following abdominal surgery due to adhesions. The case presented was not associated with any of the usual body deformities nor was there a pre-existing operation. The case was monosymptomatic, and did not present the usual symptoms seen generally, as vomiting, headaches, or constipation. In view of the rather prolonged history of diarrhea, it was felt that there might be more pathology present than a



Figs. 4 and 5.—Two views showing cecum and what appears to be the transverse colon after defecation of the barium enema.

simple colitis. The prognosis of the case presented is good.

SUMMARY

A case of low cecum with absence of ascending colon and hepatic flexure is presented.

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1720 *Connecticut Avenue.*

OBSERVATIONS IN 500 CASES OF ACNE, TREATED WITH 2,432 EXPOSURES OF X-RAY.

By C. AUGUSTUS SIMPSON, M. D., Washington, D. C.

Our experience with this form of therapy dates from 1911. A letter from our distinguished guest to Dr. Max Joseph, of Berlin, was the means of an opportunity to observe and see the results of the directly measured dosage of X-rays, computed by the Sabauraud pastile, using a Sabauraud, later a Hampsen meter with a Wehnelt penetrometer, a half of a fresh pastile in each case treated and employing a coil machine with a gas tube, the same as Joseph. I have to thank Providence that I came through the following years of this ordeal without any burns among my acnes treated.

The technique with pastiles, radiometer and penetrometer were demonstrated to this Society by me in a paper read May 8, 1912. This was the first paper on indirect measuring by pastiles to be read in America.

The subject of this report is a series of later cases treated by the indirect measuring method popularized by MacKee, Fox and others, using a transformer and a broad focus Coolidge tube. With this, one is able to control the voltage, establish certain constants, and maintain or vary them at will. However, I consider my training with the pastile as very valuable. All beginners should be acquainted with it and would do well to test out their modern machines with the pastile, or give experimental doses of ray to themselves or assistants, before undertaking Roentgen-ray treatments of patients.

Considering the pathology of acne in part as a hypertrophic, enlarged or over-active sebaceous gland, associated with a hyperkeratosis and infection, is it any wonder that a purely local and internal medicinal form of therapy could be anything but tedious and most often disappointing?

It is unreasonable to suppose that any drug can shrink or atrophy more than temporarily a hypertrophic gland some distance below the skin surface. Various lotions and salves used on the part do not meet the indications in the pathology of acne, and can now be considered only as adjuncts to X-ray therapy. The same holds true of all internal treatment, the various diets, hygienic measures, the correction of constipation, indigestion, menstrual disorders, and focal infections.

X-ray and radium are the only two agents which can achieve such a permanent atrophy, and it is for this reason that most authorities consider Roentgen-ray the most valuable agent in the treatment of acne.

The X-ray remains today the dangerous instrument it always was in the hands of the inexperienced. It has no place in the office of a beginner, nor should it be used by a technician who is not constantly supervised by an experienced physician. In our office, the technique is checked twice by one of us. We believe it is only by such painstaking methods we are able to report such a large number of X-ray exposures without a single case of radiodermatitis or damage to the skin in acne. No physician should be so busy that this added safeguard is denied his patient.

The number of patients treated in this report is 600. Two-thirds of this number were females. The interval between treatment in 500 was ten days. Patients living at a distance could not be seen or treated except at intervals of three weeks, four weeks and six weeks. These numbered 100. This leaves 500 patients who received an average of four to five exposures. Our failures after such treatments were less than 11 per cent. The number of treatments given were 2,432. We found most of the recurrences were of the menstrual type, which subsided under a second series of four treatments or less.

The small number of treatments given were due to the fact that Kromayer lamp exposures, and the usual acne lotions, as lotio alba, curettement and removal of comedoes with general

therapy, when indicated, were carried out at the same time.

We found that without the X-ray, and relying on the Kromayer and Alpine lights with the usual local and internal treatments, our results were greatly handicapped and prolonged more than four times the usual duration of two months. Even then the tendency to recurrences was much greater.

We also found that very few patients were benefited by vaccines, and their use has been discontinued except in a few intensely pustular types when we employed a mixed staphylococcus stock vaccine with some benefit in conjunction with their other treatment.

A very important part of our technique was the employment of a layer of thin chamois skin over every area treated. This seemed to eliminate the discomfort of static reactions and currents. We believe this thin filter lessens the chances of pigmentation reported by some dermatologists. We believe that with the addition of X-ray exposures, the time it takes to clear up the usual case of acne is reduced three-quarters.

Our technique was 100 K.V., 6 inch gap, 3 milliamperes, 10 inch target skin-distance, 1 minute of time, giving 1/3 of an erythematous skin dose.

Although acne is a localized disease of the sebaceous glands of the face, back and shoulders, and, as such, should receive antiseptic and astringent lotions and ointments, there is no doubt that any number of constitutional disturbances exaggerate the disease. Indigestion, constipation, anaemia, menstrual disorders, focal infection—in fact, it resembles eczema in that many general conditions lower the vitality or good health of a patient with a tendency to acne,—call forth an attack or a relapse. These conditions should be sought for and corrected in all cases, as quick results will lessen the chances of indelible scarring.

On the contrary, the same general factors may be present in a patient with xerodematous skin and yet no acne is to be found. Hence, we consider all of the general disorders above enumerated as only contributory factors, not constantly present, varying in their intensity, quite questionable in their influence, having little effect on the basic pathology of the disease, and, as such, are not the cause of acne.

1610 20*th Street, Northwest.*

FIVE CASES OF OSTEOGENESIS IMPERFECTA IN THE SAME FAMILY.*

By RICHARD MASON, M. D., The Plains, Va.

This little girl, who is now sixteen years old, first came under my care at the age of two years, at which time she had sustained a fracture of the femur from a trivial fall while she was toddling about the floor. This fracture was reduced and a Buck's extension apparatus applied, with excellent results, the fracture healing without any deformity in about eight weeks. However, in a short time another slight fall caused a fracture of the tibia in the other leg, which was treated by reducing it and applying ordinary wooden splints with sandbags on either side of the fractured leg to hold it in place. This was followed by results equally as good as the first fracture. Since that time she has sustained numerous fractures of the lower extremities, both femurs and both tibias and fibulas being involved at different times making twelve fractures in all, and always from some slight fall or other trivial cause.

On one occasion when I was called to see her she had turned over on the floor in a rocking chair and broken both legs at the same time. At first these fractures united in about the usual time it takes fractures of this kind to get union, but as the disease progressed the bones became softer, especially the leg bones, and, when the patient would begin to walk again, although union had taken place, the bones would bend from the weight of the body and become angulated at the site of the fracture, finally becoming so deformed that the patient could scarcely walk at all.

She was then sent to Dr. Thomas Madden Foley, of Washington, D. C., who did several osteotomies on her, straightening the legs and applying braces to hold them straight. The braces were kept on about two years, during which time the patient was able to walk some distance to school everyday. About four weeks ago he removed the braces, and, as you will see, she is now walking almost as well as if she had never been a cripple. Dr. Foley deserves great credit for converting this child from what seemed an almost hopeless cripple into a bright and happy girl with two perfectly good, useful legs.

Now, if the doctors present will come near enough, you may easily see the gray-blue ap-

*Case presented before the July meeting of the Fauquier County Medical Society, at Warrenton, Va., July 30, 1931.

pearance of the sclerotics so well described in Blumer's "Bedside Diagnosis." This condition is ascribed to an extraordinary transparency of the whites of the eyes which allows one to see the dark pigmentation of the choroid beneath. Five of the children in this family of eight have these gray-blue sclerotics, and two others, one older and one younger than this little girl, have had three fractures each of the lower extremities.

On taking the family history, we find that the father had five fractures during his childhood and, though he is now forty-eight years old, the gray-blue sclerotics are still easily noticed on close observation, so it would seem that this symptom persists throughout life. It is said to be pathognomonic of this disease.

We also get a history of the paternal grandfather in this family having broken his legs three times from slight falls during his childhood, illustrating that the disease is both hereditary and familial. The underlying causes are still unknown.

Osteogenesis imperfecta has to be differentiated from the various osteopathies, and the diagnosis in this case was arrived at by first eliminating rickets, which was the "label" on this family, handed down through two generation. Rickets is easily ruled out by the absence of the enlarged epiphyses, also the rachitic cachexia and history of undernourishment, this family having been always well-nourished, the two children who are unaffected by the disease being very robust.

Two of these children are also slightly deaf, which is said to be a quite frequent complication and is due to otosclerosis of the petrous portion of the temporal bone and the angle between the anterior border of the stapes, the upper edge of the promontory and processes cochleariformis. In some patients, according to Ruttin, cochlear lesions are also present.

Then, next, we had to eliminate the various tubercular and syphilitic bone diseases, which was comparatively easy as there was no history of either tuberculosis or syphilis, nor were there any symptoms, objective or subjective, of either of these diseases in this family.

Probably the most difficult disease to differentiate from osteogenesis imperfecta is a rare condition known as osteosclerosis fragilis congenita. This latter disease, however, is apparently not hereditary or familial, does not show the blue sclerotics, and, in case of doubt, the X-ray picture would clear up the diagnosis, for the rarefied bones of osteogenesis imperfecta make a picture antithical to the eburnated or "marble bones" of osteosclerosis fragilis congenita.

No treatment has been found to have any particular effect on the course of the disease except surgery, by which, as is shown in this case, much may be done to correct the deformities caused by the frequent fractures.

The prognosis is that the tendency to these fractures continues through childhood, but at puberty or a little later the rarefied bones begin to take on a more normal development and resistance and the tendency to fractures disappears in many cases. So that, we feel this little girl, whose bones have responded so well to Dr. Foley's skillful surgery, is now well "out of the woods."

I have presented this patient to you this evening because the case seemed to me one of unusual interest, not only to the surgeon and general practitioner, but, on account of the eye and ear complications, to the ophthalmologist and otologist as well.

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INFECTIONS OF THE UPPER RESPIRATORY TRACT IN CHILDREN.*

By THOMAS D. JONES, M. D., Richmond, Va.

It has been stated that 90 per cent of the diseases of children have their origin above the neck. This statement is perhaps not far from the truth, especially during the late fall, winter, and early spring months, when certainly the overwhelming majority of ailments encountered in pediatric work are easily traceable to infections of the upper respiratory tract. The prevalence of infections of the respiratory tract was duly emphasized by Sydenstricker, of the United States Public Health Service, who found that more than half of the total deaths were due to respiratory diseases, notwithstanding the fact that the ratio of illness to deaths from respiratory causes was three hundred to one.

These infections may mean anything from a cold in the head with slight local discomfort and practically no systemic disturbance, the process ending there, or it may spread over

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other portions of the respiratory passages, including pharynx, tonsils, bronchial tree, lungs and sinuses, leading to a serious or even fatal termination, so that danger is ever lurking in the common cold, and, however trivial it may appear in its beginning, we should be ever mindful of the possible serious consequences and use our best efforts to prevent its occurrence or arrest the process of its incipiency.

I shall only attempt in this paper to briefly discuss the familiar picture, met with in pediatric practice during this season of the year, commonly referred to as grippe, influenza or upper respiratory infections, the latter perhaps being the most comprehensive term, with brief references to some of the important phases of symptoms, complications, and treatments.

Symptoms: The onset in children is usually sudden. Fever is practically constant and may range from 100 to 106. Older children frequently complain of headaches, muscular pain and sore throat. Nausea and vomiting is very frequent in children and may be very troublesome, or even serious, leading to ketosis or acidosis. In the mild uncomplicated cases, the above symptoms are the chief ones encountered, and the case will go on to recovery in two or three days.

Complications: Otitis media is probably the most frequent complication, and usually makes its appearance not earlier than two or three days after the onset. A sudden rise in temperature is usually the first and sometimes the *only* thing noticed. Infants usually become more restless, and older children often, but not always, complain of pain in the ear.

Adenitis occurs with such frequency that it is questionable whether or not it should be considered a complication. The glands in the front of the neck are nearly always palpable, but as a rule the enlargement is slight and does not often demand any special attention. It does, however, become troublesome in a small percentage of cases. and may be responsible for continued fever for days or weeks. The glands do not often go on to suppuration—probably not over 10 per cent of the cases in which the glands become greatly enlarged with abscess,—and the process is slow and does not "ripen" as a rule for several weeks after the onset of the disease.

Bronchitis may be evident from the beginning, but usually comes on. when it occurs, in two or three days after the onset.

Laryngitis is perhaps always present when bronchitis occurs, but does not often present troublesome symptoms, only a small percentage of the cases having croup. When croup develops the condition may be very troublesome or even serious. necessitating intubation or tracheotomy. These cases, however, are fortunately very rare.

Pneumonia rarely develops for several days after the onset of the disease, and will not be discussed here.

Mastoiditis is practically always a late complication and not a very frequent one, but its possibility should always be considered, especially where middle ear infections occur.

Sinus infection probably occurs more frequently than it was formerly thought but is not often recognized as an early complication.

Pyuria is not at all uncommon following these infections, especially when the glands and sinuses become involved. Involvement of the tonsils is usually only a part of the general picture. One never sees a sharply demarcated tonsillitis in these cases.

Diarrhoea, acute intestinal intoxication, or cholera infantum, are very rarely if ever troublesome complications. Frequent watery stools are not uncommon, but rarely demand special treatment. When the severe types of intestinal intoxications with profuse watery diarrhoea occur in infants suffering from respiratory infections, it is probably a separate and distinct clinical entity, and not a complication. A great deal has appeared in the literature in the past few years concerning mastoid infections as a cause of intestinal intoxication, there being many adherents to this belief. The result of the very exhaustive study of Wishart, of Toronto, of a large group of children at the Hospital for Sick Children has brought out some very interesting facts. He found that the onset of acute intestinal intoxication was rarely characterized by "cold," and that the great majority of infants suffering from the disease showed no evidence of respiratory disease. He found that accumulations of infections found in the mastoid at autopsy were ante-mortem in origin. Both eardrums frequently showed abnormality immediately preceding death, and was an ante-mortem phenomenon due to the forcible ejection up to the eustachian tubes. Bilateral mastoid operation

as a cure for the disease was a failure. Thirteen were operated upon and only one recovered. There was no correspondence between the bacteriology of infections of the respiratory tract and that in the intestinal tract. His very definite conclusion as a result of the work was that infection of the mastoid antrum is not a cause of acute intestinal intoxication.

Treatment: Obviously our most serious consideration under this head should be directed along the line of prevention as far as possible. Unfortunately we have no specific agents at our command for this purpose. The use of vaccines has been advocated by various workers, and wide differences of opinion concerning their value have been reported. There seems to be evidence of good results in some cases, but such effect is by no means uniform and at the present time does not appear to offer a great deal of promise, so that the most prominent field now appears to lie in the direction of the correction or removal of the generally recognized predisposing causes.

Diseased conditions of the nose and throat should, of course, be corrected whenever a pathological condition is obvious; however, too much cannot be promised from this procedure, as recurrences of respiratory infections are often frequent after the removal of definitely diseased tonsils and the correction of diseased nasal conditions. In a careful comparative study of twenty-two hundred tonsillectomized children with an equal number of controls three and ten years after the operation, Kaiser, of Rochester, N. Y., reached some very definite conclusions. The apparent benefits during the first few post-operative years were not so evident over a ten year period. Outstanding benefits were apparent in the incidence of sore throats over a ten year period. Benefits were likewise apparent in rendering children less susceptible to scarlet fever and diphtheria. Acute head colds and otitis media were definitely lessened over a three year period but not influenced over a ten year period. Cervical adenitis was definitely reduced over a ten year period. Laryngitis, bronchitis and pneumonia occurred more frequently in the tonsillectomized children. He states in the final summary of the results of his studies that late results seen in this group of twenty-two hundred tonsillectomized children ten years after the operation were evident only in the reduction of sore throat, cervical adenitis, otitis media, scarlet fever, diphtheria and heart disease. This is certainly no argument against the removal of diseased tonsils, but does indicate what may be expected in the prevention of respiratory infections following the removal of tonsils.

The matter of proper feeding with due regard for proper proportions of food elements and vitamines should receive thoughtful consideration. The routine administration of cod liver oil to children during the winter months is of unquestionable value in lowering the incidence of respiratory infections, and is superior to irradiated ergosterol for this purpose because of its vitamine A content.

Improper clothing might in some cases be a predisposing cause, and the child should always be clothed according to climatic requirements, disregarding the time of year. Adequate sleep and plenty of fresh out-door air are also essential in keeping up the bodily resistance.

Improperly heated or poorly ventilated living rooms should also engage our attention. The dry heat of many apartments is often a strong factor in lowering the resistance to respiratory infections.

The importance of avoidance of exposure to infections of the respiratory tract is a preventive measure too frequently given scant consideration. Infants and children showing even mild symptoms of colds should be kept away from other children. Birthday parties in steam heated and improperly ventilated apartments are a frequent cause of the spread of the infection among children. We should not lose sight of the fact that the same organism or virus that might result in nothing more than a cold in the head in one child may, if transmitted to another child, cause mischief enough to result in a serious or even fatal termination. Various organisms have been indicted as a cause for the infection, including staphylococci, streptococci, micrococcus catarrhalis and pneumococci. The works of Shibley, Dochez and Mills apparently throw some light on this phase of the subject. They found that the infection could be transmitted from man to chimpanzee and from man to man by means of Berkefeld filtrates of nasal washings obtained from individuals suffering from cold. A significant fact of the infection in apes from the filterable virus was the stimulation into great activity of organisms already present in

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the respiratory flora. They attribute the contagiousness to the virus, which they believed had the capacity to incite activity on the part of the more dangerous pathogenic organisms that infest the upper respiratory tract, and offer this as an explanation for the marked secondary activity of such organisms as the pneumococcus, streptococcus haemolyticus and Pfeiffer's bacillus, which sometimes lead to the severe sequelae following common colds and influenza. Their conclusions were that the contagious cold was caused by an invisible, filtrable and uncultivable agent, which in all likelihood belongs to the group of so-called submicroscopic viruses.

A change of climate to any locality where it is warm and dry and much of the time can be spent out of doors with comfort would in some cases materially lessen the incidence of respiratory infection.

Curative Treatments: If the potential dangers of the infection are borne in mind, much may be accomplished in preventing complications and sequelae. The child should be put to bed and kept in bed for at least twenty-four to forty-eight hours after the temperature has dropped to normal. In the mild cases no special symptomatic treatment is indicated. The administration of some alkaline preparation is perhaps indicated in all cases and may have the effect of lessening the tendency to acidosis. Bicarbonate of soda is perhaps the most commonly employed agent for this purpose.

The routine use of mild astringents in the nose may lessen the chances of the infection extending into the ear or accessory sinuses. For this purpose, neo-silvol or argyrol or some of the oily preparations of ephedrine or adrenalin are useful. In young infants where the nasal secretions are crusty and the breathing is very stuffy a weak oily solution of cocaine alkaloid has a very happy effect.

The diet should be of the non-ketogenic type, consisting chiefly of fruit juices and carbohydrates. In bottle-fed infants, if there are evidences of nausea or spitting food, it is well to substitute orangeade for two or three bottle feedings and the formula should always be weakened. The infant's digestive capacity is constantly diminished in these infections. The above plan of management will take care of the digestive disturbances in the majority of cases. In a small percentage of the cases, however, vomiting may be persistent from the onset of the disease and the above plan of management cannot be instituted. In these cases colonic irrigation with sodium bicarbonate solution (1 oz. to a quart of water) and the administration of some form of glucose by bowel will usually control the condition. Occasionally, however, all of these measures may fail and more drastic management may have to be instituted, such as the administration of saline, or Ringer's solution intravenously, intraperitoneally, or subcutaneously. Or glucose may be used either by the intravenous or intraperitoneal route. If the latter method is employed, not over 5 per cent glucose should be used. These latter measures, however, very rarely have to be employed if the case is properly handled from the beginning.

Adequate rest and sleep are also essential in the management of these cases. If the child complains of pain or becomes very restless, the administration of aspirin alone or in combination with Dover's powders or luminal will add a great deal to the child's comfort. Bromides may be of value in some cases, but have never been very satisfactory in the writer's hands.

The management of all of the complications will not be gone into in detail, but I will briefly discuss a few of the problems in connection with the more frequent complications.

Otitis media, as stated before, is certainly one of the most frequent complications that one has to deal with. The time-honored phenol and glycerine mixture is often very potent for the relief of pain but it has the disadvantage if used very often of causing some desquamation of the canal which may lead to a troublesome furunculosis later on. Equal parts of 6 per cent cocaine solution, adrenalin solution and camphor water is perhaps still more potent in relieving the pain and does not cause any irritation to the canal wall. The drops should be warm, and dropped into the ear every two, three or four hours if pain is troublesome. If these measures fail and the process goes on to abscess formation with bulging of the drum membrane, incision of the membrane is indicated. Better drainage is obtained than when the drum is allowed to rupture spontaneously, there is immediate relief of pain, and the temperature is usually promptly reduced.

Adenitis is a frequent problem in these cases and always greatly prolongs the febrile period to weeks or even months. Ultra-violet treat-

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ments may prove of great value in some of these cases, while topical applications are probably of little or no value. General supportive measures with special reference to proper feeding are important considerations when this complication arises.

Laryngitis is undoubtedly one of the frequent complications, but does not often give troublesome symptoms; however, when it does actively assert itself in a definitely croupous fashion, there is probably no other complication encountered that presents a more formidable picture. The condition is often very hard and at times impossible to differentiate from a diphtheritic process. The latter condition, however, usually develops more gradually and there is an early loss of voice in the majority of cases in diphtheritic laryngitis, whereas, in the simple catarrhal laryngitis, the symptams usually develop less gradually and the voice is metallic and hoarse but rarely lost. This is an important differential point.

Perhaps the most valuable remedial agent is steam inhalation. One teaspoonful of compound tincture of benzoin and one-half of a teaspoonful of creosote to a pint of water makes a very satisfactory solution for this purpose. The administration of ipecac or antipyrine or both is of great benefit in these cases. They both have a sedative effect and apparently tend to relax the mucous membranes. In rare cases all of these measures may fail and intubation or tracheotomy may have to be resorted to.

I shall not go into the details of such complications as bronchitis and pneumonia for obvious reasons.

I am presenting this somewhat rambling discussion of this very important subject with a full realization of the fact that I am probably not presenting a single new thought. And my only excuse for offering this paper is the hope that it may stimulate some further thoughtful consideration of these very prevalent and troublesome infections.

Medical Arts Building.

A STUDY OF CONGENITAL SYPHILIS.*

By J. M. BISHOP, M. D., Roanoke, Va.

Paracelsus, in 1529, was probably the first to mention transmission of syphilis from parent to child, although there is considerable disagreement on this point. From this time until the beginning of the 20th century there were many valuable contributions to the subject. In 1904, Wassermann described the complement fixation test. In 1905, Schaudinn and Hoffman discovered the spirochete pallida as the causative organism, and in 1910 Ehrlich announced the discovery of salvarsan, "606." These discoveries are the three outstanding and important contributions relative to syphilis.

Congenital syphilis is so called when contracted by the fetus during intra-uterine life. It is difficult to find a satisfactory classification, but, for purpose of study, it is at least convenient to divide congenital syphilis into four groups:

I. Fetal—Lesions present at birth.

II. Infantile — Lesions appearing after birth but during infancy.

III. Late—Lesions appearing after infancy.

IV. Latent—A long period without manifestations, or cases accidentally discovered by routine Wassermann reaction, etc.

(The term "latent" is used in this article to indicate absence of clinical manifestations.)

Studies concerning incidence necessarily vary. The incidence is obviously much higher when including cases diagnosed only by a positive Wassermann. An examination of the routine Wassermann and Kahn reports of patients admitted to this hospital from January 1, 1929, to November 15, 1929, show 5.1 per cent positive reactions. Sixty-three per cent of this group were Negroes. Forty and seven-tenths per cent had no apparent syphilitic manifestations.

The following figures are taken from Abt's Pediatrics.[1] Jeans studies of over 5,000 pregnant women in hospitals of different cities showed slightly less than 10 per cent syphilitic. Eight hundred and fifty-four infants admitted to a St. Louis hospital gave an incidence of 4.9 per cent. Two thousand maternity cases in St. Louis, studied by Jeans and Cooke, on fetal and placental blood, among Negroes, gave 15 per cent positive reactions. Poorer whites gave 2 per cent, and the better class of whites less than 1 per cent. One per cent of apparently non-syphilitic babies gave a positive Wassermann reactions. Wirtz reported 3 per cent positive Wassermanns in apparently non-syphilitic school children in Munich. Thirty per cent of marriages in which either partner is syphilitic are sterile. A large num-

*Read before the joint Visiting and Resident Staff Meeting of the Children's Hospital of Philadelphia, January, 1930.

ber of the remaining 70 per cent produce many fetal misfortunes, and early infant deaths, leaving a relatively small number of syphilitics that pass infancy, i. e., 50 per cent of pregnancies in syphilitic families result in fetal or infant deaths, 18 per cent healthy children, and 30 to 40 per cent living syphilitic children.

Transmission, according to present day opinions, is always from the mother, and the only role of the father is to infect the mother. Colle's Law, that "A healthy mother cannot become infected from nursing her syphilitic child," is now explained by a latent syphilis of the mother. Law, of Prefeta, "A child known to be healthy, born of a syphilitic mother, cannot contract syphilis by nursing nor any other contact." This immunity does not extend throughout life. This is explained by probable latent syphilis in the child, or decreased virulence, as mentioned later.

Cannon[2] reports the following observations from 202 cases. In 80 per cent of the mothers it was impossible to determine the exact date of infection. The approximate time was determined in 168. In 158 cases the mother had not been treated. Only twenty were treated during pregnancy. Sixty cases represented the first pregnancy; forty-one, the second; thirty-five, the third; and decreasing to the thirteenth. The period of infection in the mother prior to the birth of a syphilitic child varied from five months to fourteen years. One hundred and four had been infected less than five years and sixty-four for a longer period. Healthy and syphilitic infants may alternate. Four sets of twins in different families showed one syphilitic, the other apparently healthy with persistent negative Wassermann. The ages varied from seven months to seventeen years. Dennie[3] reports five sets of twins, both syphilitic, and one pair of identical twins, one syphilitic and the other normal.

It is generally believed that the first pregnancies of the syphilitic mother result in miscarriages, still-births, or early fetal deaths, and later healthy children are born, the mother receiving no treatment. Casselman[4] states that the body sets up a protective mechanism which interferes with reproduction of the spirochetes, and usually in five years renders the patient non-infectious, even to relationship of mother and fetus, and on this basis explains the remote chance of transmission to the third generation. Observers disagree on this question. Bondurant[5] reports a case of syphilis in the third generation, and states that there are no cases reported beyond the third generation.

The Wassermann and precipitation tests for syphilis are a reliable method of diagnosis of congenital syphilis, especially when the two tests are used. There is no other form of syphilitic infection which gives a higher percentage of positive reactions[1] or in which the reaction is of more value from a standpoint of diagnosis. One hundred per cent of a series of syphilitic infants gave a positive reaction after two months of age. Cannon[2] reported 190 strongly positive Wassermanns, partial reaction in eight, and negative reaction in two.

The Wassermann may be negative during the first few weeks in an infant with congenital syphilis, but later become positive. It is also generally accepted that the Wassermann of a healthy infant of syphilitic parents may be weakly positive for the first few weeks[8] and later become negative. This is explained by the mother's blood transmitting this faculty to the infant's blood, which soon disappears. Numerous conditions and diseases have been associated with false positive reactions. These include scarlet fever, tuberculosis, nephritis, malaria, pregnancy and others. Kolmer[6] believes that a positive Wassermann may occur in these conditions, but means that the patient is also syphilitic. The report is based on a large number of cases using Kolmer's modification. He states that pregnancy may stimulate or provoke latent syphilis into activity just as trauma, intercurrent disease or the administration of arsphenamine may prove provocative, so that unexpected positive reactions may occur. Stillians,[7] using this same method, states that fifty-two clinically syphilitic pregnant women showed positive Wassermanns, and after delivery only forty-one were positive.

The early manifestations may be abortion, still-birth, or almost any type of lesion may occur in any tissue at birth or soon afterwards.

Cannon[2] observes that the rash resembles that of acquired syphilis, but is often too scanty to be recognized. Fifty-one of the 202 cases reported showed or gave a history of secondary lesions, snuffles, emaciation, epiphysitis or meningitis between the ages of three weeks and six months. Sylvester[8] summarizes the early lesions: Copper or salmon colored lesions of the skin should arouse suspicion. Small pustules with a narrow red margin on the fingers, toes, palms and soles are almost

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pathognomonic. The "d o u g h n u t" lesion, slightly raised with a clear center, occurring on flexor surfaces, is absolutely diagnostic, as is the "fussy" exudate at the inner third of the eyebrows, resembling in texture but lighter in color than seborrheic eczema. "Snuffles" lasting several weeks, fine radiating lines about the mouth and genitals, the moist, wart-like condylomata at the nostrils, corners of the mouth, folds of the vulva and anus, are diagnostic. Mucous patches are seldom seen, but appear occasionally as milky plaques at the junctions of the hard and soft palate. The liver and spleen are consistently enlarged, which is strongly suggestive in any young infant. There may be swelling tenderness, etc., of the joints, and bone changes detected by the X-ray, most often the lower end of the radius and upper end of the tibia. Syphilitic infants have large tonsils, and are more susceptible to colds, etc., but otitis media is non-syphilitic in origin. Most syphilitic infants are underweight and look old and "skinny." An infant that sleeps all day and cries all night, or an underweight infant with waxy skin and a grayish, lead-colored pallor, also suggests syphilis. Griffith and Mitchell[9] state that lesions may be present at birth, but the largest percentage appear healthy at birth with symptoms appearing later. The earliest symptoms are a persisten coryza, followed by a hoarse, high-pitched persistent crying, especially at night. Soon cutaneous manifestations appear, often accompanied by slight fever; then evidence of osseous lesions, apparent paralysis following. Debility and wasting begin early and advance with the disease. Mild cases may show no nutritional disturbance. An osteochrondritis is frequent, but often not clinically manifest at birth. It appears as a tender swelling at the junction of the shaft and epiphysis. Dactylitis of the proximal phalanx, usually of the fingers and bilateral, may occur early. Craniotabes is often present but not diagnostic.

According to Macleod,[10] the cutaneous eruption is the most characteristic sign. It consists of macules and papules of varying size, first pinkish, later reddish-brown or copper colored, chiefly on the forehead, buttocks, palms and soles, and may be on the body and extremities. The nails may become shrivelled, furrowed and brittle. Alopecia may be evident over the vertex and occiput, and even eyebrows and eye-lashes. Frontal bosses and nodes on the outer plate of the skull (Parrot's node) are not uncommon.

Syphilis is a frequent cause of moderate hydrocephalus during the first year, following a chronic syphilitic meningitis.

The later manifestations vary, as do the early ones. The late lesions[8] show a slightly different preference for tissues. Lesions of the skin are rare. The "cold sore," lasting for a long period, is suggestive. A variety of bone changes may occur, as destructive lesions with possibility of a sinus resulting, osteoporosis most often of the occipital region of the skull, saddle nose, etc., or hypertrophic lesions of the bones as frontal and parietal bosses, and saber shins. Sylvester[8] considers adenopathy of little or no value unless the epitrochlears alone are enlarged.

Cannon makes the following report on his study of 202 cases:

Age, three weeks to forty-four years. The average age at which the patient sought treatment on account of symptoms was from ten to fifteen years.

Sixty-four had wedge-shaped anterior incisor teeth.

Forty-five had tubercles of Carabelli (a small tubercle on the lingual surface of the molar teeth).

Thirty-three had mulberry molars.

Twenty-five had delayed dentition.

Twenty-one had Hutchinson teeth.

Seventy-four had high palate arch.

Forty-one had thin irregular hair.

Twenty-five had asymmetry of face and prominent bosses.

Nineteen had pupillary and deep reflex changes.

Fifteen had saber shins.

Eight had deafness.

Five had malocclusion of teeth.

Four had saddle nose.

Four had hydrocephalus.

Seventy cases sought medical advice due to symptoms of interstitial keratitis.

The teeth may show many variations, from irregularity, widely spaced, pointed, notched, and other variations, as, the mulberry molar, and tubercle of Carabelli, but these findings pertain to the permanent teeth and are of no value in the young child. Also, any severe illness or nutritional disturbance during the first year of life may cause these changes in non-syphilitic children.

Reports on the incidence of cerebro-spinal

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syphilis in congenital syphilitic children are very interesting, and stress the importance of more frequent lumbar punctures for diagnostic purposes. A positive spinal fluid Wassermann is regarded as evidence of cerebro-spinal involvement. Again, referring to Cannon's[2] report, only 17 per cent were below par mentally. Eleven and two-tenths per cent males gave a positive spinal fluid Wassermann and only 10 per cent of the females. Jeans reported central nervous involvement in 32.7 per cent of a series.

Abt[11] mentions endarteritis, meningitis, hydrocephalus, encephalitis, gummata, sclerosis, cerebral and meningeal hemorrhage as the principal lesions, and states that cerebral hemorrhage is rare in the older child, but more common in the newborn. Schaeffer[12] believes that congenital syphilis is often the unrecognized cause of the so-called spontaneous meningeal hemorrhages, and occurs most often in the female, and seems to be associated with menstruation.

A discussion of treatment should include prophylactic, i. e., discovering and treating all syphilitics before conception, or at least treating the mother during pregnancy. A mother treated adequately throughout pregnancy will deliver a baby free from syphilis. Five or six months treatment may be sufficient but leaves room for doubt, and often results in considerable embarrassment. Klaften[13] outlines the treatment as follows: Antenatal, treatment of the mother, postnatal, treatment of the newborn infant. He further divides the latter into early and late. Next to adequate treatment of the mother, the early treatment of the infant, before manifestations, is to be desired. Much less treatment is required, and this minimal treatment should be given when there is any doubt. Casselman[4] suggests a minimum of two years treatment of cases diagnosed after birth, and adds a year after the Wassermann becomes negative. The longer the child goes untreated, the longer period of treatment will be required. He gives three weekly doses of sulpharsphenamine, two weekly of bismuth, and two weeks rest, and repeats this cycle. He also uses iodides for the first half of each month. He considers bismuth more efficacious than mercury.

Sylvester[8] considers arsphenamine unsuitable for children, neoarsphenamine, 10 to 20 mgm. per kilo, the most efficacious, but attended with dangers. Sulpharsphenamine in doses 20 to 40 mgm. per kilo is very successful. The neoarsphenamine is given intravenously, as the muscular injection causes considerable pain. Sulpharsphenamine may be given intramuscularly without marked pain, or tenderness resulting. He gives the following contraindications to arsenic administration: 1. Grave malnutrition from any cause; 2. Any severe infection, particularly pneumonia or severe bronchitis; 3. High fever from any cause; 4. Acute meningeal symptoms; 5. Nephritis. Jaundice should be added even though very mild. Cases with keratitis and neurosyphilis offer very difficult problems.

Von den Steinen[14] considers spirozid (German) or stovarsol (French) given by mouth, equal to neoarsphenamine and is using this exclusively, reporting excellent results. Danzer[15] has the same opinion, and is using spirozid exclusively with good results.

The important factors of successful treatment are: 1. Conservatism; 2. Persistency; 3. Rotation. The present trend is toward smaller doses of arsenicals, and more prolonged treatment. The most satisfactory results are obtained by rotation of drugs, including arsenicals, bismuth, mercury and iodides. Mercurial inunctions are convenient and efficient. Sulpharsphenamine gives good results and is the most commonly used arsenical, especially during infancy. The urine must be examined frequently for pus, albumin, and casts during the treatment with mercury or bismuth. Treatment must be cautiously started in marked malnourished or dystrophic infants.

Erdman[16] reported several cases that bismuth remained unabsorbed from eighty-five to 435 days. Boyd,[17] in answer to this, showed that the same preparations, with proper precautions and after-treatment, were absorbed.

Nobecourt and Lebee[18] report interesting observations on convulsions associated with congenital syphilis, and find that syphilis was twice as common in children having convulsions as the general average of syphilis in other children.

The prognosis depends on the severity of the infection, age, onset and treatment. Klaften[13] states that early diagnosis and treatment reduce the mortality from 56 per cent to 15.7 per cent. Infants showing evidence of syphilis at birth have little chance of surviving. Sylvester[8] summarizes as follows: Of the untreated or insufficiently treated syphilitic infants, one year old, 50 per cent have died, 45

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per cent are maimed, and only 5 per cent give promise of reasonable physical or mental development. Cases that remain untreated until later childhood, puberty or longer, can rarely be cured, but with proper treatment may lead a happy, useful life. Syphilitic nephritis appears to be most often fatal. Cannon[2] had fourteen cases diagnosed during life, and all reached the autopsy table.

Of the cases studied in this hospital, 40.7 per cent of the total died. Fifty-one per cent had manifestations before two months of age. The mortality in this group was 78 per cent. This study forcibly reminds us of the high mortality and morbidity associated with this prevalent disease. The record above mentioned does not represent the average, as all mild cases were treated in the Out-Patient Department, and are not included.

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511 *Medical Arts Building.*

AGRANULOCYTIC ANGINA—CASE REPORT WITH AUTOPSY FINDINGS.

By J. KIRK RICHARDSON, M. D., Richmond, Va.

Within the past few years a small series of cases of agranulocytic angina have appeared in the literature and have stimulated widespread interest in a condition which has been considered as unusual as it is serious. The writer submits the following addition to this series:

Case Report

Mrs. L. M. S., aged 30, white, was first seen at her home on June 17, 1930, about midnight. She was suffering with sore throat, headache and general malaise. She gave a history of having had a curettement for an incomplete abortion about four weeks previously. One week following this operation, she developed sore throat with fever and slight nausea. This condition cleared up completely in a few days and continued so until the present time.

Examination now disclosed temperature of 101 degrees, pulse 95, and rather marked stomatitis and pharyngitis; otherwise, the findings were negative. She was again seen on the afternoon of June 18th, at which time the stomatitis and pharyngitis were more marked and there was a slight enlargement of the anterior cervical lymph glands. A blood count made that evening showed a total of about 1,200 white cells, with no polynuclears after a search of several slides. The patient was taken to Stuart Circle Hospital on the morning of June 19th, and another blood count, made immediately upon admittance, showed 4,201,000 red cells, haemoglobin 71 per cent, white cells 650, prepolys 3, polynuclears none, lymphocytes 95, endothelial lymphocytes 2. A smear from the throat exhibited staphylococci, a rare Vincent and fusiform organism and a rare streptococcic chain. A throat culture later showed the bacillus pyocyaneus predominant. The urine contained a slight trace of albumen and a few pus cells. The temperature on admittance to the hospital was 103°, pulse 98, respiration 20, blood pressure—98 systolic, 60 diastolic. The mouth now had a pronounced

membrane which came off easily without bleeding, and the anterior cervical lymph glands were slightly more enlarged and tender.

An X-ray exposure was given by Dr. Fred M. Hodges to the pelvis and knees for five minutes, and another blood count made late that evening indicated a slight improvement in the total leucocytes and polynuclears. The patient's temperature ranged from 101° to 105° during her illness. The blood picture was studied each morning and evening and the results are given in the following table:

	X-Ray Treatment		X-Ray Treatment		X-Ray Treatment				
	AM 6-19	PM 6-19	AM 6-20	PM 6-20	AM 6-21	PM 6-21	AM 6-22	PM 6-22	AM 6-23
White	650	888	633	889	500	553	475	775	3,180
Pre-Polys	3	8	9	6	1	6	6	8	2
Polys	—	—	8	1	—	—	—	—	—
Lymphs	95	84	83	80	86	84	80	84	92
Endoth. L	2	2	—	—	2	—	10	—	2
N. Myel	—	2	11	7	—	—	—	4	—
Unclassified	—	—	2	2	8	4	4	4	—

X-ray exposure was given on June 20th for five minutes to the feet and head, and on the 21st for ten minutes to the back. The blood count, as shown in the table, remained about the same, and Dr. Hodges thought it unnecessary to continue X-ray therapy. On the 21st ten cubic centimeters of leucocytic extract was administered subcutaneously, and five cubic centimeters of sterile milk was injected intramuscularly a few hours later. The leucocytic extract was repeated on the 22nd and 23rd. None of these remedies influenced the blood picture to any extent. The patient steadily grew worse and died on the morning of June 23rd. A partial autopsy was permitted, and was done by Drs. Beck and Fitzgerald. Their report, omitting negative findings, is as follows:

"Arteries of small bowel showed a moderate congestion. In the ileum was found at five different areas marked hemorrhagic condition of the serosa. On opening the bowel these were found to be small simple ulcers of about 2 mm. in diameter, with the hemorrhagic area 1 cm. surrounding them. Liver slightly enlarged and congested with slight amount of cloudy swelling. Spleen showed a moderate fibrosis. Kidneys showed a moderate amount of cloudy swelling, involving about one-third of the kidney parenchyma; moderate hemorrhage into the interstitial substance; glomeruli normal. Right tube showed a chronic salpingitis; tube markedly congested. Ovary enlarged and contained hemorrhagic and simple cysts. Left tube congested as above. Bone marrow was bright red; in probing it to remove a portion for culture the fat was found to be very pale in appearance and in a fluid condition. It seemed to consist of red trabeculae of bone and fluid fat. Microscopically the haematopoietic tissue showed normoblasts and gigantoblasts, also megakaryocytes. An occasional cell resembling a myeloblast was found, but they showed so much fatty infiltration (or degeneration) it was impossible to definitely classify them. A culture of the bone marrow gave a pure culture of pyocyaneus."

Comment: The essential elements of the clinical picture of agranulocytic angina are present in this case,—fever, sore throat, prostration, and especially the singular blood count, which is typical. The autopsy findings are confirmatory,—absence in the bone marrow of the myeloblasts, the parent cells of the polynuclear leucocytes. With our present knowledge of the condition the only treatment that offers any hope, and this quite uncertain, is X-ray stimulation of the bone marrow. In the case under review this treatment was of no benefit.

2019 *Monument Avenue.*

Miscellaneous

Clinical Pathological Conference of the Senior and Junior Classes, Medical College of Virginia.

Patient is a colored male, aged 18 years, admitted to the hospital September 10, 1931, complaining of abdominal pain.

Patient states that twelve days ago he was

taken sick with pain in abdomen, continuous in character, at first localized around umbilicus, but has since become generalized. Patient is constipated, has eaten very little and has been confined to bed since onset of present illness. No history of nausea nor vomiting. History of headache of a week's duration at onset of present illness. Detailed history is impossible due to mental condition of patient.

P. H. is essentially negative.

Physical Examination negative except for the following physical phenomena:

Marked pallor of mucous membranes. Tachycardia 100/min. B. P. 90/0.

Abdomen: Movement restricted throughout, most marked in lower quadrant. Moderate tenderness of abdomen on light pressure, considerable spasticity of abdominal musculature. Unable to palpate any viscera due to rigidity of abdominal muscles.

Rectal examination: Reveals a probable mass on the right side, considerable tenderness and free blood in lumen of the bowel.

Laboratory data: Widal positive 1-320. Positive Blood Culture for B. typhosus.

Urinalysis: Straw color, cloudy, alkaline in reaction, Sp. Gr. 1.012, albumen very slight trace, sugar, acetone, diacetic acid and bile negative. Sediment: many phosphate crystals and rare leucocyte.

Blood: Hemoglobin 40 per cent; R. B. C. 1,960,000; W. B. C. 14,500; 89 per cent lymphocytes; 6 per cent polymorphonuclear leucocytes, 5 per cent myelocytes. Smear: slight polychromatophilia and rare stippled cells.

Temperature on admission was 102.2 degrees, pulse 100, respiration 25. Four hours later temperature was 99.2 degrees, pulse 135, respiration 35. Following day temperature was 104 degrees, pulse 160, respiration 28. September 12th at 8 A. M. temperature was 101.8 degrees, pulse 154, respiration 35. Patient died at 8:20 A. M.

Therapy: Saline and glucose via hypoclysis and venoclysis.

Clinical Discussion of Case by Dr. William B. Porter

At the time of entering the hospital this patient presented the aspects of an extremely ill individual and was markedly prostrated. During the course of his illness obstinate constipation has been an outstanding symptom. He complained chiefly of abdominal pain which, according to the history, ushered in his illness, was continuous in character, was localized at first around the umbilicus, and later becoming generalized.

From the standpoint of physical diagnosis the following physical phenomena are to be analyzed:

The patient is extremely ill and prostrated; very pale; sweating; B. P. 90/0; obviously in severe shock, probably incident to massive recent hemorrhage. The low diastolic pressure and wide pulse pressure are significant, being found chiefly in severe shock, aortic regurgitation and exophthalmic goitre. The abdomen was tympanitic, not strikingly distended, but was definitely fixed. The recti muscles, if I recall correctly, stood out quite prominently. His abdomen was universally tender and markedly rigid, suggesting intense peritoneal irritation. Examination of the rectum was of extreme importance. One of the most interesting statements made by Sir William Osler was: "About the only excuse for consulting a specialist was to have him examine the rectum and test for sensation." The rectal examination in this case reveals marked generalized tenderness and free blood in lumen of bowel, which suggested pelvic peritonitis and a bleeding point, an ulcer, most likely in the lower bowel. The urinalysis is essentially negative except for the low specific gravity.

The blood study reveals a rather marked secondary anemia, and a definite leucocytosis, which could be explained by hemorrhage and perforation. The bleeding point in this case is most likely in the Peyer's patches, the seat of the intestinal lesions of typhoid fever. Perforated peptic ulcer is not a probable diagnosis in this case because of the absence of previous digestive symptoms and the age of the patient is against such a diagnosis. The patient probably had a leucopenia at the beginning of his illness. The leucocytosis represents the response to the secondary infection, peritonitis.

The primary diagnosis is typhoid fever, complicated by hemorrhage and perforation. The secondary disease is peritonitis.

Autopsy Report and Discussion by Dr. Lewis C. Pusch

I should like to diverge, if I may, from the usual procedure of these meetings in the past,

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and, instead of promptly giving my conclusion regarding the nature of this case from the observations made at autopsy, to describe the structural features and then ask you if you still agree with the diagnosis made from the manifestations of these features.

Autopsy Report: Gross Description: Body length 174 cm. Estimated weight 60 kg. Moderately marked emaciation. Leukodermic patches, a few millimeters in diameter, were present on both shoulders. Mucous membranes were pale. Abdomen not distended. Rigor mortis present.

The autopsy was limited to the abdomen. Gas escaped on opening peritoneal cavity. About two liters of seropurulent exudate was present in the peritoneal cavity with peritoneal surfaces diffusely covered with a fibrinopurulent exudate. The stomach was slightly distended, chiefly with gas, the jejunum was moderately distended, while the ileum and large intestine were collapsed. There were a few small areas of hemorrhage in the gastric mucosa. Duodenal and jejunal mucosae were grossly normal. The terminal 50 cm. of the ileum embraced many ragged non-indurated ulcers with hemorrhagic border, 1 to 3 cm. in diameter. There was no constant conformity of axes of ulcers to axis of lumen of intestine. Two of the ulcers had perforated through the peritoneal surface, with fecal material and necrotic debris occupying the openings. Margins and bases of ulcers were soft, necrotic and partly hemorrhagic. A small amount of blood was present in the colon. Colonic mucosa was grossly normal. Mesenteric lymph glands were diffusely enlarged, those draining the terminal ileum were markedly enlarged; a few were hemorrhagic. The spleen weighed 175 gms. It was soft in consistency with a reddish-brown pulp in which Malpighian bodies were barely discernible. An accessory spleen, 1.2 cm. in diameter, was present in the gastrolienal ligament.

The liver weighed 1375 gms. Capsular surface was smooth, yellowish-brown in color with foci of pale yellow. Subcapsular hemorrhagic extravasation was present at the convexity of the right lobe. Cut surface revealed a moderately friable structure, pale yellow and yellowish-brown in color. A wedge-shaped grayish-yellow area, approximately 1 cm. in diameter, resembling an anemic infarct, occurred on the anterior margin. The gall-bladder had a slightly oedematous wall, but otherwise was grossly normal. Bile ducts, portal vein and pancreas were grossly normal. The adrenal glands were unusually thin with dull grayish-yellow cortices.

Kidneys, approximately of equal size, had a combined weight of 300 gms. They were moderately hyperemic, with a vascular congestion of pelvic mucosa. The cut surface was dull grayish-pink in color with ill defined striations. Ureters, bladder, prostate and testes, grossly normal.

Discussion: Now that you are acquainted with the autopsy findings, do you adhere to the diagnosis of typhoid fever? Are the lesions as described characteristic of this disease? Are they pathognomonic of it?

It is true that the most frequent location of the ulcers of typhoid fever is in the terminal ileum. But ulcers of what other disease processes may occur there? (Student, answering: "Tuberculosis.") Yes, tuberculosis. But does the character of the ulcers in the case under consideration conform with that of tuberculosis? Tuberculous ulcers usually have indurated margins and bases, with the peritoneal aspect studded with tubercles radiating away from the ulcer along lymphatic channels. In our case the margins of the ulcers were soft and necrotic with the peritoneal surface devoid of radiating nodules. But there was no conformity between the axes of the ulcers and the axis of the intestinal lumen in our case. Classically, typhoid ulcers have been described as having an axis conforming with the axis of the intestinal lumen, since they arise in Peyer's patches, while tuberculous ulcers are said to be girdle ulcers. If either disposition predominates in the present case it is that with the long axis at right angles to the lumen. Perforation is unusual in tuberculosis.

How would you differentiate this case from bacillary dysentery? Ulcers occur in this disease, although not as initial changes. They are irregular in outline and tend to be confluent, rarely discrete. The predominant feature in bacillary dysentery is the formation of a hemorrhagic diphtheritic membrane, involving chiefly the colon, with ulceration arising from sloughing of the membrane. Perforation is rare.

In amoebic dysentery, also, the colon is the common site of the intestinal lesions. Inflammatory response is lacking and ragged masses

of undermined necrotic mucosa partly cover irregular communicating ulcers with yellowish white necrotic bases. The ulcers rarely perforate.

From the location and character of the ulcers, associated with multiple perforations, and from the character of the remainder of the abdominal viscera, there is little doubt that we are dealing with a case of typhoid fever. Moreover, the Widal and blood culture were positive, and typhoid bacilli were cultivated from the peritoneal exudate obtained at autopsy. It is well to note that not all cases of typhoid fever conform to the classical differentiation from tuberculosis on the basis of direction of axes of intestinal ulcers.

The cause of death in this case is generalized seropurulent and fibrinopurulent peritonitis secondary to perforations of typhoid ulcers of the ileum. The small amount of blood present in the intestines at autopsy scarcely supports hemorrhage as an immediate cause of death.

Further Discussion by Dr. Porter

Our conception of this case was correct. My impression is that the laboratory evidence—hemoglobin 40 per cent, R. B. C. 1,960,000—is definite proof that bleeding was an important element in this patient. Anemia is not a prominent feature of uncomplicated typhoid fever. My impression is that operation would have been of no benefit, for general peritonitis was already present when the patient was admitted to the wards.

Statistical Facts on Typhoid Fever at the Medical College of Virginia Hospital Division

During the past five years 8,795 patients have been admitted to the medical service of the Hospital Division of the Medical College of Virginia. The diagnosis of typhoid fever was made on ninety-one of these patients. Fourteen of the cases clinically were typhoid fever, but were serologically and bacteriologically negative for typhoid fever. Seventy-seven of the cases either had positive Widal or blood cultures. Nine of the patients died. Autopsies were performed on five of them. The pathologist's reports are as follows:

Case 1. Primary disease typhoid fever with perforation. Secondary disease generalized peritonitis.

Case 2. Primary disease typhoid fever. Secondary disease bronchitis and bronchopneumonia.

Case 3. Primary disease typhoid fever complicated by hemorrhage and perforation. Secondary disease generalized seropurulent and fibrinopurulent peritonitis.

Case 4. Autopsy limited to kidney and liver. Pathologic diagnosis: Septicemia and toxemia. Acute diffuse nephritis.

Positive Widals and blood cultures were obtained on this patient.

Percentages of deaths: 11.68 per cent death rate in proven typhoid cases in this series; 9.89 per cent death rate, including the fourteen clinical typhoid cases in this series.

Woman's Auxiliary, to the Medical Society of Va.

President—*Mrs. J. Allison Hodges*, 5511 Cary Street Road, Richmond.
President-Elect—*Mrs. M. N. King*, 1314 Westover Avenue, Norfolk.
Secretary—*Mrs. James K. Hall*, 3011 Seminary Avenue, Richmond.
Treasurer—*Mrs. Wm. Branch Porter*, 5125 Cary Street Road, Richmond.

Echoes From the Convention.

The meeting of the Medical Society of Virginia, which closed its Sixty-Second Annual Session on October 8, 1931, will be recorded as one of, if not the largest and most successful in its history. Approximately, six hundred doctors and their wives attended. We believe the ladies added enthusiasm and interest to the occasion. There were eighty-two visiting and sixty-two local ladies registered; business sessions were held both mornings. In addition to the fine reports given by the Women's Auxiliaries, we had most interesting and illuminating addresses given by Dr. W. F. Draper, the new Health Commissioner of Virginia; Dr. Greer Baughman, upon Pre-Natal Care; Dr. Louis Brand, upon the condition of women and children in Korea. Miss Ellen Smith, who has given invaluable service to the Public Health Department in her work for the pre-school examinations and Child Health Day, made a most interesting address. She explained the purpose of the Health Cards, and illustrated her talk with a large Chart, showing the conditions in every County in Virginia. She distributed the cards, and asked for

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the earnest assistance of the Auxiliaries in this most important work.

The high-lights of the meeting were the addresses of our honor guests, Mrs. George Hendon, President of the Women's Auxiliary to the Medical Society of Kentucky, and Mrs. Arthur McCormack, Past-President of the Auxiliary of the Southern Medical. They brought us most inspiring messages, which I hope will stimulate us to greater efforts. Kentucky has twenty-two Counties organized, and Virginia only four, I regret to say. We must make a better record this year. One of the most remarkable reports made was that of Mrs. Mountcastle, who is not in any way connected with the Medical Profession, of the work that she started a few years ago in the examinations of school children in Roanoke. Hundreds of children through her earnest efforts have been treated and cured. All who heard her must have realized that this is a vital and definite work and one which the Auxiliaries can undertake at once. To have healthy citizens, we must start with the children, in this strenuous age. We need a hundred per cent efficiency.

Mrs. E. H. Ould, President of the Women's Club, told of their health work and pledged the support of her organization.

Mrs. Hodges expressed the hope that other Women's Clubs throughout the State would help in the promotion of health.

Mrs. W. F. Drewry, of Richmond, led the discussion upon Public Relations. There are many cults, fads and semi-medical treatments in evidence today, and we must beware of them, and rally to the support of scientific medicine.

The work to which the Auxiliary will give special attention, this year, will be along the lines of pre-natal and post-natal education and pre-school examinations for children.

Always we are endeavoring to increase the number of Auxiliaries in Virginia and to enlarge their scope of work.

We are glad the Auxiliary was officially recognized by the Medical Society, as part of its activities, when the President was asked to report with the other Committees. The President, Dr. J. Allison Hodges, President-Elect, Dr. I. C. Harrison, and two of our Advisory Committee, Dr. Southgate Leigh and Dr. J. W. Preston, brought us messages of encouragement and appreciation.

The Local Committee, under the able leadership of the Chairman, Mrs. J. O. Boyd, seemed to have anticipated every wish and everything was done for our pleasure and comfort. The entertainments were unusual and varied. A delightful luncheon at the Country Club, a trip to the Natural Bridge, followed by a lovely tea at the historic old Forest Tavern and a gorgeous ball and cabaret was the climax of the convention.

I wish to express the very sincere appreciation of the Auxiliary, as well as my personal thanks, for the lavish hospitality and many courtesies of our hostesses.

The Roanoke Convention is over, but our visit to your "Magic City" will be a golden memory to carry through the years.

MARY GRAY HODGES,
(MRS. J. ALLISON HODGES).

The following notice taken from the *Roanoke (Va.) Times*, for October 9th, gives an idea of the lovely entertainments enjoyed by the ladies:

VISITORS ENTERTAINED

A delightful and well attended luncheon was given at the Country Club on Wednesday for the wives of the local and visiting members of the State Medical Association. About forty tables were arranged in the spacious living and dining rooms, each table being arranged with a centerpiece of pink roses and individual pink-rose nut baskets.

Mrs. W. W. S. Butler, Jr., presided at the luncheon, as she has done throughout the convention in the absence of the general chairman, Mrs. J. O. Boyd, owing to her illness. A toast and welcome to the visitors was given by Mrs. Harry B. Stone, who also presented a lovely corsage bouquet to Mrs. J. Allison Hodges, of Richmond, president of the Woman's Auxiliary of the association. Mrs. Hodges graciously responded in behalf of the visitors. During the luncheon a delightful musical program was rendered by Mrs. E. Lee Trinkle, violin, accompanied by Mrs. George Lawson, and Mrs. George Hurt, soprano, accompanied by Mrs. M. R. Faville.

At the conclusion of the luncheon, tables were arranged for contract and auction bridge, handsome prizes being awarded in both games. Others of the guests enjoyed golf on the club course.

Visit Natural Bridge and Forest Tavern

Thursday afternoon at 2 o'clock, motors conveyed the women who are attending the state medical meeting on a trip to Natural Bridge, where they viewed this interesting natural wonder. Later in the afternoon there was a tea for the ladies at Forest Tavern. Receiving the guests were Mrs. W. W. S. Butler, Jr., Mrs. W. L. Powell and Mrs. J. T. McKinney. The tea table was presided over by Mrs. William R. Whitman and Mrs. Harry B. Stone. Among others assisting were Mrs. C. D. Nofsinger, Mrs. Alfred P. Jones, Mrs. Littleton Davis, Mrs. Kenneth Graves, Mrs. F. W. Barger, Mrs. T. D. Armistead, Mrs. Hayward Wescott, Mrs. Elbyrne Gill, Mrs. Fred F. Oast, Mrs. Churchill Robertston, Mrs. Fred Hamlin, Mrs. George Lawson, Mrs. J. D. Willis, Mrs. Blanton P. Seward, and Mrs. M. A. Johnson.

The Truth About Medicine

In addition to the articles enumerated in our letter of August 28th, the following have been accepted:

Abbott Laboratories
- Neocinchophen—Abbott Tablets, 7½ grains.

Lederle Laboratories, Inc.
- Diphtheria Toxoid, two 1 c.c. syringe packages.
- Diphtheria Toxoid, two 1 c.c. vial packages.
- Diphtheria Toxoid, one syringe package.
- Diphtheria Toxoid, one vial package.
- Solution Liver Extract Parenteral (Lederle).

E. R. Squibb & Sons
- Diphtheria Toxin for the Schick Test, Ready to Use Without Dilution.
- Scarlet Fever Streptococcus Toxin—Squibb, six 10 c.c. vial packages.
- Squibb Liquid Petrolatum with Agar and Phenolphthalein.

New and Non-official Remedies

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Non-official Remedies:

Pentobarbital-Sodium—Sodium ethyl (1-methylbutyl) barbiturate. Sodium ethyl (methylpropylcarbinyl) barbiturate. The monosodium salt of ethyl—(1-methylbutyl) barbituric acid. Pentobarbital-sodium differs from barbital, U. S. P. (sodium diethylbarbiturate) in that one of the ethyl groups of the latter is replaced in the former by a 1-methylbutyl group. The actions and uses of pentobarbital-sodium are essentially similar to those of barbital, but it is effective in smaller doses. The action is of relatively brief duration, which may constitute an advantage, especially when relatively large doses are administered. It is used as a sedative, particularly prior to local, general or spinal anesthesia. It can be used safely for such purposes only by those who have had adequate experience and who are familiar with the literature concerning such use. The drug may be administered by mouth or rectum; intravenous injection is considered unsafe.

Capsules Pentobarbital-Sodium—Abbott, 1½ grains.—Each capsule contains pentobarbital-sodium—N. N. R., 0.1 Gm. (1½ grains). Abbott Laboratories, North Chicago, Ill.

Pulvules Pentobarbital-Sodium—Lilly, 1½ grains.—Each pulvule (capsule) contains pentobarbital-sodium—N. N. R., 0.1 Gm. (1½ grains) and starch, 0.13 Gm. Eli Lilly & Co., Indianapolis, Ind. (Jour. A. M. A., September 5, 1931, p. 705).

Skiodan.—Methiodal.—The sodium salt of monoiodo-methanesulphonic acid. Skiodan contains 52 per cent of iodine. It is proposed as a therapeutically indifferent medium for roentgenography, especially for visualization of the urinary tract either by intravenous injection or by direct injection into the renal pelvis through a ureteral catheter. It has also been administered rectally. Winthrop Chemical Co., Inc., New York.

Gynergen Solution 0.1 Per Cent.—Each c.c. of solution contains 1 mg. of gynergen (New and Non-official Remedies, 1931, p. 183) and a small excess of tartaric acid. Sandoz Chemical Works, Inc., New York.

Squibb Chocolate Vitavose.—A mixture of Squibb's vitavose (New and Non-official Remedies, 1931, p. 245), 30 per cent, with cocoa, milk solids and sucrose. E. R. Squibb & Sons, New York. (Jour. A. M. A., September 12, 1931, p. 779).

Scarlet Fever Streptococcus Toxin—Squibb (New and Non-official Remedies, 1931, p. 370).—This product is also marketed in packages of six 10 c.c. vials of toxin containing, respectively, 500, 2,000, 8,000, 25,000, 40,000 and 40,000 skin test doses per c.c. E. R. Squibb & Sons, New York. (Jour. A. M. A., September 26, 1931, p. 930).

Foods

The following products have been accepted by the Committee on Foods of the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in Accepted Foods:

SMACO (200) Whole Milk Sterilized (S. M. A. Corporation, Cleveland, Ohio).—A canned sterilized homogenized whole milk. It is recommended for all uses of whole milk and especially for infant feeding. (Jour. A. M. A., September 12, 1931, p. 780).

Accepted Devices for Physical Therapy

The following have been accepted by the Council on Physical Therapy of the American Medical Association for inclusion in its list of Accepted Devices for Physical Therapy:

Victoreen r-Meter.—The Victoreen r-Meter is an instrument designed to determine rapidly the intensity of roentgen rays at any point in roentgens per minute. The instrument consists of a small ionization chamber rigidly connected to a string electrometer by means of a metallic tube. It is supplied in four scale values, 0-5, 0-10, 0-25, 0-50 roentgens, the total value depending on the range of intensities to be measured. The construction of the apparatus includes shielding from extraneous rays, and the apparatus may be used with any quality of roentgen radiation from 30 peak kilovolts upward. Victoreen Instrument Company, Cleveland, Ohio.

Fricke-Glasser X-Ray Dosimeter.—The Fricke-Glasser X-Ray Dosimeter (or, more properly, quantimeter), is an instrument designed to measure the quantity and intensity of roentgen rays and is calibrated in international roentgens. The instrument consists of a small ionization chamber and a string electrometer connected to each other by means of

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a rigid metal tube filled with ceresin and a flexible metal tube. The instrument can be mounted on a table and can thus easily be moved from one treatment room to another. The manufacturers claim that the error in accuracy does not exceed one per cent. The ionization chamber is intended to be placed directly on the patient in the field of irradiation. Victoreen Instrument Company, Cleveland, Ohio. (Jour. A. M. A., September 12, 1931, p. 729).

Propaganda for Reform

Bismuth in the Treatment of Syphilis.—In the selection of a bismuth preparation the different factors come up as to whether one wants a soluble or an insoluble preparation, how often the dosage is going to be given, and how rapidly it is desired to have the preparation absorbed. The average effective bismuth preparation should contain from 0.03 to 0.2 Gm. of metallic bismuth in a dose and a course of therapy lasting eight to ten weeks should probably amount to from 0.6 to 2 Gm. of metallic bismuth. The Council on Pharmacy and Chemistry has gone on record as opposed to intravenous bismuth therapy. The therapeutic dose is too close to the toxic dose; therefore, one is limited to intramuscular injections. If one is desirous of a preparation with comparatively rapid absorption and one that probably should be given twice a week, one might employ the thio-bismol in a dose of 0.2 Gm. (metallic bismuth, 0.075 Gm. per dose); or the potassium sodium bismuth tartrate, aqueous solution, usually with a dose of 0.1 Gm. (metallic bismuth, 0.04 Gm. per dose). These soluble preparations should be given twice a week and are hardly suitable for general office practice. When one administration per week is feasible only, one is forced back on the use of a soluble preparation suspended in oil, or an insoluble salt suspended in oil. Recently, there has been a turn to the use of liposoluble bismuth preparations; there is a claim that these combine the good points of both the soluble and the insoluble salt, but it is too early to answer this question definitely. (Jour. A. M. A., May 16, 1931, p. 1721).

Science and the Advertiser.—*Printers' Ink*, a journal for advertisers, is anxious to establish a "Forget Scientists Week": "Perhaps you have been so foolish as to think that scientists worked at the business of science. Not so. They test cigarettes, tell frightened mothers about breakfast foods, warn young men against the dangers of something that usually ends with—osis. Now and then to be sure they make an epoch-making discovery which will bring about an astounding revolution in the manufacture of nine-count, full-fashioned galoshes. In short, they are scientists of the advertising pages." *Printers' Ink* recognizes the dismay that has been aroused in scientists generally by the exploitation of pseudo-science in advertising. It ridicules those who are now preparing copy for advertisements in modern periodicals, because they are so utterly lacking in originality. Advertising in the periodicals of the United States has gone to lengths that have opened it to ridicule and censure. (Jour. A. M. A., May 23, 1931, p. 1799).

Effects of Female Sex Hormone on Conception.—Experiments on guinea pigs made with a view of determining the effects of injections of the female sex hormone on conception and on pregnancy, showed that the female sex hormone is the active agent in producing estrus. In previous studies it had been found that injections of the serum from pregnant women would delay the onset of estrus in guinea pigs. These observations would seem to indicate an antithetic action between the female sex hormone and the corpus luteum hormone. Other experiments have indicated that the injection of the female sex hormone into pregnant white rats would terminate the pregnancy if it had not exceeded five days. Other investigators also, using white mice, were able to prevent conception and to interrupt pregnancy at any stage with comparatively small doses of the sex hormone. With guinea pigs small doses of the female sex hormone prevented conception and with larger doses it was possible to interrupt pregnancy and in some cases caused the death of the mother. (Jour. A. M. A., May 16, 1931, p. 1698).

Vapex.—Vapex is manufactured by Thomas Kerfoot and Company, Ltd., England, and is distributed in the United States by E. Fougera and Co., Inc., New York. The stuff is sold at a price that seems to be enormously in excess of the cost of its ingredients, which may explain the vast sums that have been spent on persuading the public that the product is a marvel of therapeutic efficiency. Some of the advertising slogans have been: "Vapex Amazed Scientists. . . . Its vapor kills cold germs." "Instant relief for nasal affections with its delightful vapor." An advertisement in *Good Housekeeping* contains the preposterous statement to the effect that "relief from head colds is instantaneous with Vapex." Vapex was examined in the A. M. A. Chemical Laboratory and as a result of this examination the Laboratory concluded that a solution having essentially similar chemical and physical attributes as Vapex may be made as follows: Menthol 15 Gm., Oil of Lavender Flowers 15 c.c., Alcohol 94 per cent to make 100 c.c. It thus appears that this alleged "important medical discovery" is essentially menthol dissolved in alcohol and perfumed with oil of Lavender! And it is sold with the implied claim that it will cure nasal infections, give quick relief from catarrh and hay fever, and prevent influenza! (Jour. A. M. A., July 18, 1931, p. 196).

Book Announcements

Simplified Diabetic Management. By JOSEPH T. BEARDWOOD, Jr., A. B., M. D., F. A. C. P., Chief of Diabetic Clinic and Associate Visiting Physician Presbyterian Hospital, Philadelphia; Physician in Chief to the Department of Metabolic Diseases, Abington Memorial Hospital, etc. And HERBERT T. KELLY, M. D., A. A. C. P., Associate in Diabetic Clinic, Presbyterian Hospital, Philadelphia, etc. Diets prepared with the collaboration of ELSIE M. WATT, A. B., formerly Dietitian Diabetic Clinic Presbyterian Hospital, Philadelphia. Philadelphia. J. B. Lippincott Company. 1931. 12mo. of 190 pages. Illustrated. Cloth. Price $1.50.

Tales of the Cochiti Indians. By RUTH BENEDICT. Smithsonian Institution. Bureau of American Ethnology. Bulletin 98. United States Government Printing Office. Washington. 1931. Octavo of 256 pages. Paper. For sale by the Superintendent of Documents, Washington, D. C. Price 40 cents.

Careers. Medicine. Leaflet No. 6. United States Department of the Interior. Office of Education. By WALTER J. GREENLEAF, specialist in higher education. United States Government Printing Office. Washington, D. C. 1931. Pamphlet. For sale by the Superintendent of Documents, Washington, D. C. Price 5 cents.

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Editorial

Secondary Anemia.

The pallid patient is often brought to the clinical attention of the practitioner. Any practice has a more or less fair proportion of patients showing some form of anemia. The doctor has to investigate this important condition. He has the necessity before him of making a diagnostic study into the nature and, if possible, the cause of the anemia. In these times, pernicious anemia may first be investigated through a laboratory study of the blood and a careful physical examination and a complete history investigation. This condition is relatively rare in comparison to anemia of a secondary nature. Wide publicity, in medical publications, of recent therapy in pernicious anemia, where the use of liver extract and liver feeding has brought about more or less favorable results and apparently retarded the progressive downward course of these patients, has caused a concentration of thought upon pernicious anemia, where, as there is far more prevalent anemia of the secondary type in patients. Fortunately, inquiry into this important situation of the secondary anemias has more recently taken form, and more investigation into the more frequent condition has been effected. One has only to recall that many primary factors may exhaust and deplete the blood supply and its important elements in point of volume, cell numbers and hemoglobin.

Bleeding, whether in large or small amount from some hidden area, may bring about secondary anemia. Such hemorrhaging as is found in clinical conditions such as gastric or duodenal ulcer, bleeding from hemorrhoidal veins; uterine bleeding; from intestinal parasites, such as hookworm and tape worm; chronic malarial infection; malignant disease; chronic suppurations; chronic nephritis; chronic conditions of the liver, as cirrhosis; chronic lead, phosphorus or silver poison; chronic inflammations of the colon; chronic disease of the lung or pancreas—these and other primary conditions may bring about secondary anemia and demand attention from the point of view of the red cell side of blood volume. The terminology of anemias may be, as yet, quite confusing to the physician and the classifications of various anemias be unsatisfactory but the practitioner may feel encouraged over the prospect from the fact that in the face of secondary anemia, microscopic, laboratory, Roentgen-ray and physical examination may discover the primary cause and in some instances these can be removed and effective therapeutic measures may be found to bring the red back to the blood.

Large doses of iron and possible association of phosphorus together with adequate feeding of balanced rations of proper vitamin qualities make for regeneration and improve-

ment of blood values. Publications and reports point to the return to iron therapy; sometimes advantageously used with liver therapy, ultra violet rays and fresh air.

Multiplicity of Medical Organizations.

Following the World War and influenced by contemporaneous conditions of several kinds, there developed in this country a situation of multiplied and manifold organization groups among medical men. This increase of organizations was a more or less natural evolution and has brought about, doubtless, many advantages in the increase of knowledge, in the spread of medical influence and in the promotion of health measures throughout the land. Naturally, such a wholesome movement as many of these organizations possessed brought about, it is feared, a complex situation in medical organization. As one considers the multiplicity and overlapping of these meeting groups, one is struck by the effect that may soon be felt of retarding rather than improving the general welfare of physicians and the public. One should be careful in expressing a word of caution as one considers the advantages of meeting together of medical men for study and contemplation of medical problems, but one may err here as elsewhere in life's set up for promotion of the welfare of public good. So it may be well to take a more conservative view of membership in multiplied medical organizations and to make a careful survey of one's requirements in this field and to choose those that would seem to represent the most helpful influences and to withdraw from unnecessary and overlapping organizations that take unduly of one's time and make for reduplication and loss of motion in medical effort. The county, state and national medical organizations stand as fundamentally necessary to every doctor. Special societies, in limited degree, afford further needed means for improvement and efficiency. Meetings and organizations of hospital staffs also are important.

Food Advertising and the Medical Profession.

Horses, dogs, sheep and cattle are known to be influenced materially by the kinds and quality of food daily given them. The vigor, endurance and spirit of the horse and dog may be entirely changed by a routine of feeding; the quality, size and usefulness of sheep and cattle may be greatly affected in one season by the quality and kind of food given them. Fortunately, man appears to posses inherent physiologic powers of far wider proportion than lower animals when it comes to considering the effect of feeding upon the vigor, endurance, size and health of the body, but, doubtless, in a more or less degree the comparison may be insisted upon for the purpose of pointing out the dependence of all animal life upon the nature and quality and amount of the food taken daily. From such a general point of view, one may point to the appropriateness of medical supervision and inquiry into the quality and nature of food products advertised to American citizens by food manufacturers. It is fundamentally a professional obligation that the American Medical Association has begun to discharge to the public, as it has brought forward more and more actively and thoroughly the important operation of its Committee on Food. It is now a cause for professional satisfaction that the medical reader may have offered to him each week a report, by an authorized body of the medical profession, upon this important matter. For the physician has now only to refer to the *Journal of the American Medical Association*, which comes to his desk each week, to obtain reliable information on important facts concerning widely advertised food products. As the work continues and more and more products are considered and evaluated, the physician will have, in the collected compilation of his weekly journals, if properly bound and placed in his library, a valuable and authoritative work upon this important phase of his daily practice.

It appears that primarily this Committee on Foods was established to protect medical readers from the unwarranted claims made by manufacturers and sellers of foodstuffs. The advertisement of foods had begun to take on proportions of extreme importance because public places, billboards and the radio had become flooded with extravagant claims for special products. With the importance of food, in its relation to disease, in its relation to obesity and with its relation to the nationwide effort to "reduce" on the part of women and men, and with the effects of food upon allergic individuals, with the effect of food upon the malformed, underfed and deficiency diseased persons, with the effect of food on the emotions and nervous system and its action through the

vitamins, upon the structural and procreative systems and etc., the indiscriminate advertisement claims were wisely brought under the scrutiny of the authoritative agency of American medicine—the Committee on Foods of the American Medical Association.

Doubtless the effect of this body upon this problem will find its counterpart in that high service rendered the user of drugs by drug advertising by the Council on Pharmacy which has functioned with national influence for the past twenty-five years to the protection of the public and the education of working physicians. A. G. B.

Our President, Dr. Isaac Carrington Harrison.

It is notable that after an interval of some three decades the Medical Society of Virginia for its third time has selected a president from Danville, our southernmost city, Dr. Isaac Carrington Harrison, who, following his election of last year as President-elect, now automatically becomes president.

I. C. HARRISON, M. D.,
President, Medical Society of Virginia

Dr. Harrison was born at the "Wigwam," Amelia County, December 18, 1870. He is of old Virginia lineage in which the professions are well represented. His paternal grandfather conducted Amelia Academy, a school for boys, in which Dr. Harrison received his early education. His father was a Baptist minister and a Confederate veteran. His mother was Anna Mayo Carrington, of Charlotte County, the granddaughter of Judge Paul Carrington of the Court of Appeals of Virginia.

After obtaining his B. A. degree from Richmond College, Dr. Harrison taught two years at Judson College, N. C., entering the medical department of the University of Virginia in 1892, receiving his degree of M. D. in 1895. During his third year as a student he held the position of assistant demonstrator of Medical Biology and Pathology. The year following his graduation he served as instructor in Chemistry at the University, assisting Dr. J. W. Mallett. At this time he numbered among his classmates and associates Drs. A. L. Gray and W. T. Graham, of Richmond, Dr. Hugh Young, of Baltimore, Dr. W. S. Leathers, of Vanderbilt University, and Drs. Hugh S. Cumming and L. L. Lumsden, now of the Public Health Service.

During 1897 Dr. Harrison served as an intern at the Johns Hopkins Hospital and the following year as instructor in Chemistry at the University College of Medicine in Richmond, maintaining an office on West Grace Street. From 1898 to 1910 he practiced in Clarksville, Va., removing to Danville in 1910, where he has practiced continuously since.

In January, 1899, Dr. Harrison was married to Miss Rosalie Smith, daughter of Professor Francis Smith, of the University of Virginia. The family now consists of two daughters and three sons, two of the latter of whom are students of medicine.

In additioh to his practice in Danville, Dr. Harrison has devoted much time and thought to educational and civic matters, having served for ten years as a member of the School Board, and for a number of years as chairman of that body. During the World War he served as a member of the Medical Advisory Board. He has likewise served as a member of the Playground and Recreation Association of Danville, as a member of the Danville Board of Health, and was instrumental in the establishment of the Hill Top Tuberculosis sanatorium. Since 1918 he has been a member of the Virginia State Board of Medical Examiners, examining upon various subjects and has served for the greater por-

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tion of this time as Chairman of its Question Committee. In addition to the State organization, he is a member of the National and of local medical organizations; he has served as a member of the Executive Staff of Memorial Hospital, Danville, since its organization, and as President of the Danville Academy of Medicine during 1928.

During his incumbency of the office of President-elect of the Medical Society, in conjunction with the President, it has among other important duties devolved upon Dr. Harrison to supervise and direct the activities of the Society in Graduate Clinical work, in which work he has been active and untiring and in which substantial advancement has been made.

Dr. Harrison's training and experience, together with his willingness and capacity for work, well fit him for the role of President.

J. W. P.

President's Message

In entering upon my duties as President of this Society I wish again to express my sincere thanks and appreciation for the high honor you have bestowed upon me. I am sensible of the fact that there is no greater compliment that could come to a member of the Medical Society of Virginia than the peculiar privilege of taking his place in the long list of distinguished physicians who have occupied this office. It is my heartfelt desire and purpose to perform the duties of the office faithfully and efficiently. To this end I ask your hearty cooperation and assistance in directing the activities of the Society, and your kind indulgence in solving the perplexing problems that may confront us in the new and untried work that may be undertaken during the coming year.

As President, it is my duty to select the chairmen of the various committees, to fill vacancies, and to change the personnel of the various committees, when the best interests of the Society seems to call for such changes. It is customary as far as practical to have the committees represent all divisions of the State, and unwise to retain one person in the same position over long periods. The President will be glad to confer with the Chairmen of all committees in reference to the work proposed to be done, and solicits correspondence with all members on any subject pertaining to the welfare of the Society.

Many of you have shown interest in the past year in the work of the Department of Clinical Education. As you all must know, this work is under direction of the President-elect, who, with the other members of the Department and with the active help of the Councilors in each District, is attempting to promote a plan of continuous post-graduate education for all the doctors in this State. One of the wonderful things about medicine is that there is always something new and useful to learn, and it is our duty anl privilege to see that this knowledge is passed along to the other fellow.

After a year as Chairman of this Department and after seeing this work grow because of the cooperation and hearty interest shown by a number of our Councilors and by the officers of a number of the local societies, I am sure that under the direction of our President-Elect, Dr. Flippin, during this coming year there will develop still greater interest in this more than worthwhile undertaking.

It is sincerely hoped that plans will be made and dates fixed for clinical meetings throughout the State. Decide whether you desire a discussoin of one subject—cancer—obsterics—pneumonia—tuberculosis, for example, or whether it is desired to have a mixed program. Also decide whether the clinicians and lecturers shall be those in your own community, or whether you desire the Department of Clinical Education to assist you in securing speakers. Dr. Flippin will doubtless be glad to assist you in selecting a subject and will also help you in securing clinicians or speakers.

The Department of Clinical Education will hold the regular meeting in Richmond in December, and at that time it will probably be decided whether the committee on Postnatal and Prenatal clinics will undertake to begin their work during the current year. This is a sub-committee of the Department of Clinical Education. It is composed of two members from each of the State Medical Schools, two

from the Society at large and two, added at the request of a special committee meeting in Roanoke, who are country doctors. The whole purpose of these clinics will be to benefit and educate the physicians through post-graduate training.

It is contemplated that an able whole-time clinician in obstetrics and gynecology shall conduct clinics in designated centers for groups of physicians, and at times to meet physicians in their offices to assist them, but only at their request. The details of the plan will be published later. It is our sincere desire in attempting to introduce this plan of education to place our profession in the forefront of preventive medicine. We hope to lower the mortality rate of mothers and the newborn to such an extent, and to so impress the public with the efficiency and skill of our physicians, both town and country, that no woman will be satisfied to pass through the ordeal of childbirth without the supervision and care of a competent physician.

I. C. Harrison, M. D.,
President, Medical Society of Virginia.

Department of Clinical Education
OF THE MEDICAL SOCIETY OF VIRGINIA

Foreword.

Following the custom of the past several years, the President-Elect of the Society becomes Chairman of the Department of Clinical Education. The material for this issue of the Monthly was called for almost immediately after the annual meeting in Roanoke. In consequence a brief statement only is possible.

Since its inception I have had a lively interest in the Department of Clinical Education and unfaltering faith in its opportunities for service to the medical profession of the State. It has been my privilege to be rather closely associated with the activities of the department in the past and I am well acquainted with the fact that those who have preceded me in office have given most freely of their time and strength to this work. Through their efforts we are probably on the threshold of a period of greater activity and wider usefulness. It is, therefore, increasingly important that the activities of this department be at all times aligned with the needs and desires of those it was designed to serve.

To the end that the work go forward in a manner worthy of my predecessors—and it must do this—my first desire and impulse is to ask for the full cooperation of members of the Society. More especially does the committee charged with these responsibilities invite the constructive thought and friendly counsel of the councilors of the several districts upon whom this responsibility also rests. The effort will be made to keep members of the Society fully informed of the activities of the department on this page of the Monthly.

J. C. Flippin, M. D.,
President-Elect and Chairman, Department of Clinical Education.

The Third Year Begins.

"Medical education is not a purely medical problem. Every one has a right to participate in the dividends of modern medicine; consequently, the public looks to us. The steadily increasing group consciousness of organized medicine and its growing desire to assume leadership in the solution of the great problems of public health, fix on us a very definite responsibility. In the continuous education of the practicing physician we see the greatest single contribution that organized medicine can make, and responsibility rests not on the medical college but on us." So it is written by Dr. Charles A. Gordon, a conspicuous leader in post-graduate medical education in Brooklyn and New York State.

As Chairman of the Committee on Public Health and Medical Education, Dr. Gordon at one time administered the extensive program of post-graduate training sponsored by the Medical Society of the State of New York. In its third year the Committee was conducting courses of four to six weekly two-hour sessions in counties throughout the State. Attendance reached a total of 3,268 in one year,

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and the average cost per student-physician in attendance was $1.38; next year by combining two or more local groups the average cost per student in attendance at one meeting was reduced to eighty-six cents. The courses dealt with a variety of subjects: internal medicine, heart diseases, obstetrics, pediatrics, diseases of the heart and lungs, nephritis, metabolism, syphilis, gastro-entrology, surgery, and other branches.

Three distinctive features of the New York Society's program were its careful investigation into the needs and desires of the county society for which a course was to be arranged, its close check upon the results of each meeting as reported by the local secretary, and its standing invitation to the county units to "ask for anything they want" from single lectures to courses of any length—and in most cases the demand was met.

Lacking the resources of its larger sister society, the Medical Society of Virginia through its Department of Clinical Education has had to confine itself to a less ambitious program during the two years of its organized effort to make educational facilities available for its members. The Department has continued to offer its assistance in the arranging of scientific meetings, and whenever the offer was accepted it has been able to contribute in some degree to the success of the program. An actual count over a twelve months' period shows a total of fifty-four meetings by thirty-two county and regional societies reported in the VIRGINIA MEDICAL MONTHLY. Exactly two-thirds of these meetings were scientific and educational; the others were held for social and business purposes. But these thirty-two societies whose activities were reported constitute less than half the number of component units. What the others were doing during this period is, so far as the central records are concerned, a secret that probably will never be revealed.

It is a definite aim of the Department of Clinical Education to publish on this page in as complete form as possible an advance schedule of educational meetings as they are arranged. If these notices can be followed up by accounts of what happened at the meetings, another advance will have been made. But the Department hopes to obtain a minimum of indispensable information in regard to the value of the program, the suitability of the subjects considered, the attendance, the particular problems revealed, and suggestions for improvement in future meetings. Over a period of years this data will serve to eliminate many of the difficulties that are coming to light in the initiation of the new program of continuing medical education.

In short, the Department aspires to have the local societies, like those in New York, ask for anything they want. The only reason for the Department's existence is to minister to the need expressed in such requests, and it will gladly use all the resources at its command in any opportunity to expand and develop post-graduate medical education in Virginia.

GEORGE W. EUTSLER,
Executive Secretary.

SCHEDULED MEETINGS

Programs of Norfolk County Medical Society

NOVEMBER, 1931.

MONDAY, 9TH NOVEMBER—Section on Surgery

Acute Cranio-Cerebral Injuries. Dr. C. Carroll Smith.

Surgical Treatment of Lung Abscess. Dr. Horace G. Ashburn.

MONDAY, 16TH NOVEMBER—Section on Medicine

Public Health Session, under direction of Dr. J. Jett McCormick, Health Commissioner of Norfolk.

MONDAY, 23RD NOVEMBER—Section on Obstetrics

Some Case Reports. Dr. G. Bentley Byrd.

Trichomonas Vaginalis Vaginitis. Dr. C. J. Andrews.

MONDAY, 30TH NOVEMBER—Section on Eye, Ear, Nose and Throat

Program to be arranged.

The South Piedmont Medical Society

Will hold its regular semi-annual meeting in Lynchburg, Va., November 24th, under the presidency of Dr. C. W. Pritchett, of Danville. Dr. Geo. A. Stover, South Boston, is secretary.

The subject for general discussion at this meeting will be "Arthritis," with the following subdivisions and leaders:

Etiology and Pathology. Dr. D. P. Scott, Lynchburg.

Treatment of Acute Arthritis. Dr. J. J. Neal, Danville.

Treatment of Chronic Arthritis. Dr. T. N. Davis, Lynchburg.

Orthopedic Treatment. Dr. B. H. Kyle, Lynchburg.

All members of the State Society will be welcome at this session.

Proceedings of Societies

The Southwestern Virginia Medical Society

Held its semi-annual meeting at Marion, Va., September 24th and 25th, with the president, Dr. E. G. Gill, of Roanoke, presiding. In addition to the papers presented by the invited guests, Dr. Horton Casparis, of the Vanderbilt University, Nashville, Tenn., and Dr. I. A. Bigger, Medical College of Virginia, Richmond, there were a number of interesting papers by members of the Society.

The following officers were elected for the ensuing year: President, Dr. George A. Wright, Marion; vice-president, Dr. Nat Copenhaver, Bristol; and secretary-treasurer, Dr. A. M. Showalter, Christiansburg (re-elected). Dr. A. B. Greiner, Rural Retreat, was elected a member of the Executive Committee. The following men were also elected to membership in the Society at this meeting: Drs. J. A. Soyars, Saltville; T. N. Spessard, Roanoke; E. V. Richardson, Glade Spring; and D. C. Boatwright, Marion. The next meeting will be held in Bristol, Va., during the latter part of March, 1932.

Roanoke Academy of Medicine.

A called meeting of this society was held on September 28th for the purpose of hearing reports from the chairmen of various committees for the Medical Society of Virginia meeting and for the election of officers. Dr. John O. Boyd. president presided.

The following officers were elected for the ensuing year: President, Dr. Everett E. Watson; vice-presidents, Drs. F. A. Farmer and E. C. Ambler; secretary-treasurer, Dr. Charles H. Peterson; members of the Executive Committee, Drs. H. B. Stone, I. E. Huff, Paul Davis, E. C. Watson, and Churchill Robertson. The members of the Judiciary Committee as elected are: Drs. J. W. Preston, H. H. Wescott, E. G. Gill, J. D. Willis and W. L. Powell. Delegates to the meeting of the Medical Society of Virginia were also elected at this time.

The Rockbridge County Medical Society

Met at Jackson Hospital, Lexington, Va., September 22nd, with Dr. F. L. Thurman, of Buena Vista, presiding. Dr. Charles Groseclose, of Buena Vista, gave a very interesting paper on Potassium Sulpho-Cyanate in the Treatment of Hypertension. He stated that the drug is not without danger and in his cases, the beneficial results were transient. Dr. Reid White, Jr., of Lexington, gave a very instructive talk on Arthritis, stating that in addition to eliminating all foci of infection, special diets are very important. Dr. T. F. Kennan, of Raphine, was elected to membership.

Dr. Howard L. Mitchell, Lexington, is secretary of this society.

The South Piedmont Medical Scoiety,

At its regular meeting last April, elected the following officers for the ensuing year: President, Dr. C. W. Pritchett, Danville; vice-presidents, Dr. J. J. Neal, Danville; Dr. F. O. Plunkett, Lynchburg; Dr. C. B. White, Halifax; and Dr. Thos. G. Hardy, Farmville. Dr. Geo. A. Stover, South Boston, was re-elected secretary-treasurer. It was voted to hold the next meeting in Lynchburg on the fourth Tuesday in November.

At this meeting, the preamble to the Constitution and By-Laws of the Society was amended so as to provide that physicians residing in the counties of Bedford, Amherst and Appomattox shall be eligible for membership in the South Piedmont Medical Society and be invited to join.

The Clinch Valley Medical Society,

Held its semi-annual meeting in Gate City, Va., September 30th, under the presidency of Dr. N. W. Stallard, of Dungannon. Visiting clinicians for this meeting were Drs. F. O. Plunkett, Lynchburg, and Drs. W. H. Higgins and Wyndham B. Blanton, Richmond. The doctors from the various counties composing this society met and appointed delegates to the Roanoke meeting of the State Society.

Dr. Frank Pyott, Tip Top, was elected president for the ensuing year, and Drs. G. B. Setzler, Pennington Gap, and V. W. Quillen, Nickelsville, vice-presidents. Dr. C. B. Bowyer, Stonega, was re-elected secretary-treasurer. It was voted to hold the next meeting of the Society at Appalachia, Va.

Culpeper County Medico-Dental Society,

At its monthly meeting in October, at which the president, Dr. D. W. Kelly, Jr., presided, elected the following officers: President, Dr. M. B. Lewis (dentist); vice-president, Dr. J. L. Stringfellow; and secretary-treasurer, Dr. O. Kyle Burnette.

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News Notes

—and a Good Time Was Had by All.

The annual meeting of the Medical Society of Virginia in Roanoke, October 6th, 7th and 8th, is one which will long be remembered by those fortunate enough to attend, not alone for the lovely entertainment provided but also for the excellent scientific program and the smoothness with which the program was conducted. The local committee had laid its plans so that everything moved without a hitch. The president, Dr. J. Allison Hodges, of Richmond, was assisted in presiding at the various sessions by Dr. I. C. Harrison, president-elect, and by the vice-presidents, Drs. M. B. Hiden, C. B. Bowyer and J. M. Hutcheson.

A special feature of the opening day was clinics arranged by the Roanoke Academy of Medicine on obstetrics, pediatrics and medicine, these being conducted by three visiting clinicians of prominence—Dr. P. Brooke Bland, of Jefferson Medical College, Philadelphia; Dr. Charles Gilmore Kerley, of Polyclinic Hospital, New York; and Dr. Russell L. Cecil, of Cornell University, New York. Dr. Cecil was also one of the president's guests and presented a most excellent address at the general meeting on Tuesday evening. The other guest was Dr. Ralph P. Truitt, of Baltimore, who read the opening paper in the symposium on Mental Hygiene on Wednesday morning. This symposium was excellent and it will be a matter of interest to our readers to know that all papers and discussions on this subject will appear in an early issue of the MONTHLY. There was a luncheon given all members of the Society following this session.

On Wednesday evening, there were brief reports by a number of the committees of the Society that the members generally might have an insight into the business side of our organization. This was the meeting at which our new State Health Commissioner, Dr. Warren F. Draper, made his initial appearance before a large gathering of the Virginia profession. Health officers from nearby states had been invited for this special session. Those attending were Dr. A. T. McCormack, from Kentucky, Dr. R. H. Riley from Maryland, and Dr. W. T. Henshaw from West Virginia, all of whom extended greetings from their states and welcomed Dr. Draper to the "family" of State Health Commissioners. This session was followed by a reception to the President of the Society, guests and members, with a splendid cabaret and grand ball.

The last session of the Society was held at Catawba Sanatorium, at which place an excellent dinner was served those attending. The lovely drive to and from the Sanatorium, the luncheon and interesting session there made a fitting close for a most enjoyable and interesting meeting. At this session Dr. I. C. Harrison, Danville, was installed as president and Dr. J. C. Flippin, University, as President-elect. The vice-presidents for the ensuing year are: Drs. G. F. Simpson, Purcellville; F. H. Smith, Abingdon; and Warren T. Vaughan, Richmond. The place of meeting will be named later by the Council.

Under the department assigned to the Woman's Auxiliary is a report of the lovely entertainments provided for the ladies.

At the golf tournament, on the first day of the meeting, Dr. T. N. Spessard, Roanoke, won the silver cup for low net score; Dr. R. H. DuBose, Roanoke, a silver cocktail shaker for low gross score, and Dr. Thomas G. Hardy, Farmville, was the recipient of the booby prize.

Minutes of Roanoke Meeting to Appear in December.

Owing to the fact that the reporter of our General Sessions has been suffering with a severe case of iritis, making it impracticable for her to transcribe notes taken, we will publish complete report of the General and Business Sessions of the Roanoke meeting of the Medical Society of Virginia in the December issue of the MONTHLY.

The Virginia Roentgen-Ray Club

Held its sixth annual meeting on Wednesday, October 7, 1931, at 6:30 P. M., at the Patrick Henry Hotel, Roanoke, Va. The club members at this time were dinner guests of Drs. J. T. McKinney, J. F. Armentrout and C. H. Peterson, of Roanoke

The guests of the club included: Dr. J. L. Hankins, of Johnson City, Tenn., and Mr. Edward C. Jerman, of the General Electric Company.

Due to the absence of the president, Dr. A.

L. Gray, Dr. J. T. McKinney was elected temporary chairman.

Dr. Charles Peterson, of Roanoke, was elected to membership.

A motion was adopted calling a special meeting to be held on the evening of Saturday, October 31st, in the city of Richmond, for the purpose of considering a tariff of fees, the election of officers, to receive the report of a committee appointed last year relative to the regulation of X-ray technicians in the State, and such other business as may be brought before the Club at that time.

A telegram was sent to Dr. Gray, expressing the regrets of the club members at his absence and a committee composed of Drs. D. D. Talley, Fred Hodges and Wright Clarkson was appointed with instructions to purchase a piece of silver with appropriate engraving and to present the same to our president, Dr. Gray, in appreciation of the work that he has done for the Club and the Science of Roentgenology.

WRIGHT CLARKSON,
Secretary-Treasurer.

The Virginia Pediatric Society

Held its annual luncheon meeting in the Patrick Henry Hotel, Roanoke, October 7th, the second day of the meeting of the Medical Society of Virginia, with the president, Dr. W. B. McIlwaine, Petersburg, presiding. The guest speaker on this occasion was Dr. Horton Casparis, professor of Pediatrics at Vanderbilt University, Nashville, Tenn., who spoke on "Tuberculosis in Children: Prevention and Control."

Officers elected for the ensuing years are: President, Dr. St. Geo. T. Grinnan, Richmond; vice-president, Dr. W. W. Waddell, University; secretary-treasurer, Dr. J. B. Stone (re-elected), Richmond.

The Governor's Conference on Childhood and Youth.

At the conclusion of the White House Conference on Childhood and Protection held last November in Washington, a resolution was adopted requesting every state in the union to have a State Conference as a follow-up of the White House Conference. The officials of the White House Conference requested the Cooperative Education Association of Virginia to be responsible for the follow-up in this State.

Governor Pollard, in keeping with the request made by the officials of the White House Conference that the Governor of each State call such a Conference, has issued such a call for Virginia, setting the dates as November 23rd and 24th. This happens to be at the same time as the Annual Meeting of the Cooperative Education Association so the Governor's Conference is held in connection with the regular Annual Meeting of this Association. The program of the Association will be set aside from the night of November 23rd through the night of November 24th and the State Conference on Childhood and Youth will occupy that period.

A Planning Committee was named by the Governor and the Executive Committee of the Cooperative Education Association early in the year. Members of this Committee are, in addition to the Governor, Dr. J. L. Jarman, President of the Cooperative Education Association and General Chairman of the Conference; Dr. Sidney B. Hall, Chairman of the Committee on Education and Training; Dr. Warren F. Draper, Chairman of the Committee on Health and Medical Service; Dr. W. T. Sanger, Chairman of the Committee on Character and Civic Education; Mr. Frank Bane, Chairman of the Committee on Welfare; and J. H. Montgomery, Secretary of the Conference.

The Chairmen of the four general committees have provided for a number of sub-committees. The Committee on Education has provided for sub-committees on "Child Labor" with Mr. John Hopkins Hall, Chairman; "Guidance" with Miss Bessie Mottley, Chairman; "Recreation and Physical Education" with Mr. Tucker Jones, Chairman; "The Family and Parent Education" with Mr. George B. Zehmer, Chairman; "Special Education" with Mr. H. M. McManaway, Chairman; "The Infant and Pre-School Child" with Dr. John L. Manahan, Chairman, and "The School Child" with Dr. George Oscar Ferguson as Chairman.

The Committee on Health and Medical Service has provided for sub-committees on "Maternal Care" with Dr. Greer Baughman as Chairman, and "Child Care" with Dr. L. T. Royster as Chairman.

The Committee on Character and Civic Education has provided for sub-committees on "Church Activities" with Rev. Minor C. Miller, Chairman; "The Home and the School" with Dr. E. L. Fox, Chairman; "Organized

Recreational and Character Building Agencies" with Mr. M. W. Lee Chairman and "Commercialized Recreation" with Dr. Rolvix Harlan, Chairman.

The Committee on Welfare has provided for sub-committees on "The Blind" with Mr. L. L. Watts, Chairman; "Mental Hygiene" with Dr. Beverley Tucker, Chairman, and "Underprivileged" with Miss Emily Dinwiddie, Chairman.

The purpose of this Conference is to try to find out just what is being done in Virginia at the present time to give childhood and youth of the State the best possible opportunities in the field of education and character and civic education, to find out what has been done to insure the best physical conditions and proper medical service, to study the problems with reference to neglected, dependent, underprivileged and delinquent children and youth, and see what is now being done for this underprivileged class. Then, to endeavor to appraise what is now being done and to point the way to future development along all of these lines.

Another purpose is to bring together the representatives of all of the agencies and organizations of the State that are doing anything at all in the field of service for childhood and youth that they may think and plan together in a great Statewide conference, set forth objectives and then follow this up by concerted effort to insure the best possible advantages for the childhood and youth of this great Commonwealth.

The Committees appointed are now busily at work on their task. Through the work of these committees, the Planning Committee desires to secure the information which will be necessary in proposing to the Conference some very definite objectives. These objectives will be in line with the findings of the White House Conference, but will perhaps be more definite and will be confined to the State of Virginia.

The Conference will be held at the John Marshall Hotel in Richmond. The opening session will be on Monday night, November 23rd. Governor Pollard will officially open the Conference, and his address will be followed by an address by Dr. Ray Lyman Wilbur, who was President of the White House Conference. On Tuesday morning the sub-committees will meet in places assigned to them for the purpose of discussing their topics and of having any delegates attending the Conference participate in the discussion of the subject assigned to the committee.

Tuesday afternoon the general committees will have meetings of their sub-committees jointly. The delegates to the Conference will have the privilege of attending and participating in the meeting of any of these committees.

On Tuesday evening the findings of the Conference will be presented for discussion and adoption. This will be followed by a brief address by Governor Albert C. Ritchie, of Maryland.

As a follow-up of the Conference findings will be presented to all of the organizations represented in the Conference. The leaders in each city and county of the State and in each local community will be requested to bring these findings to the attention of the citizens and to put forth an effort to help carry out the objectives.

Through the cooperation of all of these forces in Virginia, definite progress should be made during the next few years in bringing about better educational, health, social, civic, recreational and moral conditions.

The Southern Medical Association

Will hold its annual meeting in New Orleans, November 18th-20th. The program will present every phase of medicine and surgery, the new things and the new and better application of the old things. Everything will be presented under one roof, enabling physicians to go easily and quickly from one program activity to another. On the first day there will be a general clinical program arranged by Dr. Felix J. Underwood, Jackson, Miss., president of the Association, and also several other meetings. Sections will meet in half-day sessions on Thursday and Friday, and on Friday, running concurrently with the sections, a general program by New Orleans physicians will be given. The president's reception and dance, the outstanding social function of this meeting, will be held on Wednesday evening, preceded by a short session featuring the president's address. Thursday evening has been given over to alumni reunions.

The American Society of Tropical Medicine, the National Malaria Committee and the Southern Association of Anesthetists meet conjointly with the Association this year.

Entertainments will include golf tournaments for both the physicians and ladies and

a trap shooting tournament with the introduction of a new feature, skeet shooting. There will be special entertainment for the visiting ladies, this being under the direction of the Woman's Auxiliary to the Orleans Parish Medical Society.

An official S. M. A. post-convention cruise to the Tropics—Panama, the Canal Zone, and another Tropic Port will be given. Further information about this trip and other matters may be obtained from the secretary-manager, Mr. C. P. Loranz, Empire Bldg., Birmingham, Ala.

News From University of Virginia, Department of Medicine.

Dr. Lawrence T. Royster gave a course of lectures on The Physical Examination of the Child, before the Southern Pediatric Seminar at Saluda, N. C., during the first week of August.

Dr. Edwin L. McQuade, recently County Health Officer of Henrico, and for the past two years Assistant in the Department of Epidemiology of the School of Hygiene, Johns Hopkins University, has assumed his duties as Assistant Professor of Public Health in succession to Dr. George B. Young who retired at the close of the last session.

Dr. Kenneth B. Maxcy and Dr. Edwin L. McQuade attended the meeting of the American Public Health Association in Montreal from September 14th to 17th.

Dr. William H. Goodwin and Dr. Henry B. Mulholland represented the Medical School on the program of the Mercer County Medical Society, meeting at Bluefield, W. Va., from September 24th to 26th. Dr. Goodwin's contribution was on Endometriosis; Dr. Mulholland's on Diabetes with special reference to children.

Dr. Vincent W. Archer attended the meeting of the American Roentgen-ray Society at Atlantic City from September 22nd to 25th. Dr. Archer was Chairman of the Committee on Awards for the Scientific Exhibits.

Dr. John M. Nokes, for the past two years Instructor in Obstetrics and Gynecology at the Medical School of Vanderbilt University, has been appointed Assistant Professor of Obstetrics and Gynecology.

The Medical School opened on September 21st with a total enrollment of 240. The entering class numbers sixty-eight.

Col. M. L. Crimmins, U. S. Army, retired, visited the Medical School on October 1st. He spoke before the Albemarle Medical Society in Charlottesville on the subject of Rattlesnake Venom.

News From Duke University School of Medicine and Duke Hospital.

On October 1st the second year of the medical school began and 145 students of all four classes were registered.

The Nurses' Home, which is now under construction, is progressing rapidly and will accommodate approximately 230 nurses. The general plan is similar to that of the other dormitories on the campus.

On October 9th a clinic on undulant fever was given at the Duke Hospital by Dr. J. Powell Williams and Dr. Frederick W. Shaw, of Richmond, which was attended by the members of the veterinary profession of the State of North Carolina.

Medical College of Virginia News.

Construction of the library of the Medical College of Virginia, which will adjoin the library and home of the Richmond Academy of Medicine and be built at the same time, has begun. The architects are Baskerville and Lambert, Richmond, Va., and the consulting engineers Wiley and Wilson, of Lynchburg and Richmond. The contractors are Doyle and Russell, of Richmond.

This library will contain very ample offices, work rooms, a reference room, a large general reading room, five seminar rooms, and an attractive faculty room. Three stack levels will be equipped at this time and it will be possible to add two additional stack levels subsequently. The total housing capacity for books will be approximately a hundred thousand volumes.

The St. Philip Hospital school of nursing dormitory and education unit, toward which the General Education Board and the Julius Rosenwald Fund contributed $120,000, will be formally opened on Tuesday, November 10th, with appropriate exercises at 3 P. M. Dr. J.

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H. Dillard, of Charlottesville, Va., will be the chief speaker. Brief remarks will also be made by Miss Elizabeth F. Miller, secretary of the Pennsylvania State Board of Examiners for Registration of Nurses, and Miss Charlotte Pfeiffer, representing the Virginia State Board of Nurse Examiners. President W. T. Sanger, of the college, will preside at the exercises.

This new unit for the school of nursing will accommodate ninety-four student nurses and staff members and provides one whole floor for teaching and recreational purposes. It is built immediately north of the St. Philip Hospital facing south on Marshall Street.

Ex-Interns' Association of St. Elizabeth's Hospital.

This Association held its eighth annual meeting on October 15th, at the hospital in Richmond, Va., with the president, Dr. Ralph Dunn, of Sumter, S. C., presiding. Clinics and operations by Dr. J. Shelton Horsley and staff were held at the morning session, followed by a luncheon at the Westmoreland Club. At the afternoon session, interesting papers were presented by Dr. Ralph Dunn, president, and Dr. Harry J. Warthen, Jr., Baltimore. A symposium on Diseases of the Blood was presented by Drs. Estill L. Caudill, Elizabethton, Tenn.; Raymond Vonderlehr, Washington, D. C.; and W. A. McGee, Richmond.

At the business session, the following officers were elected for the ensuing year: President, Dr. Raymond A. Vonderlehr, Washington, D. C.; vice-president, Dr. W. K. Dix, Richmond; and secretary-treasurer, Dr. John S. Horsley, Jr., Richmond (re-elected).

At the close of the meeting supper was served at the home of Dr. and Mrs. J. Shelton Horsley.

Department of Neurosurgery at University of Maryland.

A department of neurosurgery has recently been established at the University of Maryland School of Medicine, Baltimore, and Dr. Charles Bagley, Jr., of that city, has been placed in charge of this new division, with Dr. Richard G. Coblentz, also of Baltimore, as associate. Dr. Bagley was formerly associated with Dr. Harvey Cushing at Peter Bent Brigham Hospital, Boston.

Dr. Frank S. Johns,

Richmond, Va., has been elected president of the Richmond Chapter of the Hampden-Sidney Alumni Association, succeeding Dr. Wallace Blanton, who has served in this capacity for the past two years.

The American College of Physicians.

The Sixteenth Annual Clinical Session of the American College of Physicians will be held in San Francisco, Calif., April 4-8, 1932. The headquarters in San Francisco will be the Palace Hotel, where the general scientific sessions, registration, and exhibits will be held. Clinics will be conducted in various hospitals and institutions in San Francisco and nearby communities.

Dr. S. Marx White, Minneapolis, President of the College, has in charge the selection of speakers and subjects on the general program, while Dr. William J. Kerr, San Francisco, Professor of Medicine at the University of California Medical School, is the General Chairman of the Session, and is responsible for all local arrangements, in addition to the arrangement of programs and demonstrations. Following the San Francisco Session a post-convention tour will be conducted through Yosemite Valley, Southern California (with two days in Los Angeles) and the Grand Canyon of Arizona.

The attention of the secretaries of various societies is called to the above dates, in the hope that their societies will select non-conflicting dates for their 1932 meetings.

Dr. Van M. Ellis,

Of the class of '30, Medical College of Virginia, who completed an internship at the Wisconsin General Hospital, Madison, Wis., last summer, has received an appointment for 1931-32 as resident physician at Princeton University, Princeton, N. J.

S. M. A. Corporation Ten Years Old.

November, 1931, marks the tenth anniversary of the announcement of S. M. A. to the medical profession after years of experience had demonstrated its worth in the locality where it was developed. The company putting out this product was first known as The Laboratory Products Company and has since changed its name to the S. M. A. Corporation, of Cleveland, Ohio, advertisement of which appears in the MONTHLY.

We extend our congratulations and wishes for continued success to this Company.

Dr. Bergey With National Drug Company.

Dr. D. H. Bergey, formerly professor of Hygiene and Bacteriology, University of

Pennsylvania School of Medicine, has been appointed Director of Research in Biology by the National Drug Company of Philadelphia. Professor Bergey is well known as a teacher and as director of research in bacteriology at the University of Pennsylvania and is unusually equipped for directing Research in Biology.

Virginia Men Receive Appointments in Medical Corps.

Announcement has been made of the appointment of Dr. E. T. Trice, of Richmond, as major with the Medical Corps, U. S. Army, and Dr. Reid White, Jr., Lexington, as first lieutenant with the Medical Corps.

Goes Into Health Work.

Dr. Dwight Rivers, of Lynchburg, Va., has accepted the position as Assistant Director of the Southside Health District, Farmville, Va. After returning from France where he served as Medical Officer in the World War, Dr. Rivers did post-graduate work in pediatrics and practiced that specialty in Lynchburg until October 1st when he assumed the duties of his new position in public health work.

Dr. Lula W. Garst,

Catawba Sanatorium, Va., is on a leave of absence for the winter months and is studying in the Department of Medicine at Johns Hopkins University, Baltimore, Md., specializing in gastro-enterology.

Dr. Llewellyn Powell,

Alexandria, Va., who recently underwent an operation for removal of the gall-bladder at the Emergency Hospital, Washington, D. C., expects to be back at work early in November. We understand that Dr. Powell took spinal anesthesia and watched his operation.

Dr. A. S. Hurt, Jr.,

Of the class of '26, University of Virginia, following which he interned at Stuart Circle Hospital, Richmond, has located in Richmond, with offices in West End Medical Building, 2618 Grove Avenue. He is specializing in pediatrics, the subject in which he had a fellowship at Mayo Clinic for sometime.

The American Roentgen-ray Society,

At its annual meeting held in Atlantic City in September, installed Dr. Leopold Jaches, of New York, as president, and Dr. William A. Evans, Detroit, was made president-elect. Dr. Eugene P. Pendergrass, is secretary of this Society. The next annual session will be held in Detroit.

Dr. U. W. Massie,

Of the class of '30, Medical College of Virginia, who located in Fincastle, Va., after completing his internship at Lewis Gale Hospital, Roanoke, Va., is now in Bluefield, W. Va., at the N. & W. Railway Y. M. C. A.

Dr. Alpheus H. Wood,

Of the class of '27, Medical College of Virginia, who formerly practiced at Emporia, Va., is now connected with the medical staff at Catawba Sanatorium, Va.

Dr. William F. Hatcher

Announces that he has moved his offices from Bacova, Va., to Hot Springs, Va., where he will continue in general practice.

Married.

Dr. James Bannister Stone and Miss Janet Watkins, both of Richmond, Va., November 3rd.

Dr. Clabe Webster Lynn and Miss Grace Lunsford Friend, both of Petersburg, Va., October 17th.

Dr. Frazier Clyde Bedsaul, Galax, Va., and Miss Rosamond Vaughan, Spring Valley, Va., September 9th.

Dr. George Preston Nowlin, formerly of Lynchburg, Va., but now of Charlotte, N. C., and Miss Mary Ann Jones, of Lynchburg, Va., October 10th.

Dr. Edwin Foster Gouldman, Colonial Beach, Va., and Miss Margaret Reid, Washington, D. C., October 13th.

Dr. James Winston Watts, II, of the University of Chicago Hospital, Chicago, and Miss Julia Meem Harrison, Lynchburg, Va., in October. Dr. Watts was formerly of Lynchburg, and graduated from the University of Virginia in 1928.

Dr. Fred Y. Ketner, Concord, N. C., of the class of '28, Medical College of Virginia, and Miss Winnie D. Stokes, of Newsom, August 3rd.

An Appreciation of Dr. Matas.

The American Journal of Surgery has dedicated its October, 1931, issue to Dr. Rudolph Matas, eminent teacher and surgeon of New Orleans. It is known as the Matas Birthday Volume, commemorating "the close of five decades of his professional life as well as the attainment of the Biblical three score and ten."

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It is stated that "this anniversary is a great epoch in his life as well as in the history of the medical profession of our country." The issue in question is a collection of surgical essays written in honor of Dr. Matas.

Dr. Clarence Porter Jones,

Newport News, Va., by invitation, gave a talk on "The Battle of Yorktown" before the Virginia Society, Sons of the American Revolution, at its meeting in Richmond, early in October.

The American Association of Obstetricians, Gynecologists and Abdominal Surgeons,

At its meeting at White Sulphur Springs, W. Va., recently, elected Dr. Walter T. Dannreuther, New York City, president for the ensuing year, and reelected Dr. Magnus A. Tate, Cincinnati, secretary. It was voted to hold the next meeting at French Lick Springs, Ind., in September, 1932.

Dr. H. McG. Robertson,

Medical Director in the U. S. Public Health Service, was transferred, October 1st, from the American Consulate at Glasgow, Scotland, and is at present in Washington, D. C. Dr. Robertson has been a member of the Medical Society of Virginia for a number of years.

Dr. Emmett H. Terrell,

Richmond, Va., was recently elected president of the William and Mary Club of this city, for the year beginning October.

Grace Hospital Unit.

Organization of the Grace Hospital Unit of the Organized Reserves was completed on October 15th, when all the vacancies in the professional services were filled by members of the hospital staff. The unit, which is officially, known as the Fifty-second Station Hospital, would be located at Fort Monroe in event of war. It would have facilities to care for 250 patients and would serve as a hospital for troops located in the vicinity. The unit is commanded by Dr. Nelson Mercer, Lieutenant-Colonel in the Medical Corps Reserve. The commissioned personnel of the unit is as follows: Dr. Alvah L. Herring, chief of the surgical service, with rank of Major, and Dr. Bruce L. Randolph, Dr. Thomas B. Washington, and Dr. R. Angus Nichols, Jr., as his assistants; Dr. Julius H. Hulcher, chief of the medical service, with rank of Major, and Dr. Thomas B. Pearman, Jr., Dr. William B. Morton, Dr. William L. Ball, and Dr. James L. Hamner as his assistants. Dr. Wyatt E. Roye is in charge of the laboratory service.

Obituary Record

Dr. Francis Page Nelson,

Crozet, Va., died suddenly, September 24th, of heart failure. He was born in 1886 and graduated from the Medical College of Virginia in 1914. Dr. Nelson was a member of the Medical Society of Virginia. During the World War, he served as a lieutenant in the medical corps. His wife and six children survive him.

Dr. John Blair Deaver,

Eminent Philadelphia surgeon, died at his home in Wyncote on September 25th. He had been suffering from anemia for some time and had undergone a number of blood transfusions. Dr. Deaver was 76 years of age and a graduate of the University of Pennsylvania School of Medicine in the class of '78. He was for many years chief surgeon at Lankenau Hospital and was emeritus professor of surgery at the University of Pennsylvania. Dr. Deaver was particularly known for his operations for appendicitis, of which he performed thousands. He was also widely known through his scientific writings, some of which were translated into other languages and became textbooks in medical and surgical schools. A son and two daughters survive him.

Dr. Dorsey Goodwin Tyler,

Formerly of Richmond, Va., died September 30th, at Oak Park, Ill. He was forty-two years of age and a graduate of the Medical College of Virginia in 1916. Dr. Tyler was formerly associated with Dr. Thomas Murrell, of Richmond. He was at one time a member of the Medical Society of Virginia. Two sons survive him.

Mrs. William L. Sohl.

Mr. Sohl, president of the Sulpho-Lithin Company, of New York, well-known to many of our readers, wishes us to advise his friends among our readers of the sudden death of his wife in the hospital, on September 18th. She was born in Northumberland County, Virginia, 69 years ago and they had been married forty-five years.

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